THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXVIII.—No. 4029. APRIL 23, 1920.

WRECKING AN INDUSTRY.

THE long and admirable letter from Mr. J. W. Simpson, President of the Royal Institute of British Architects, which appeared in the *Times* on Monday, and which we give elsewhere, deals with a question of the greatest importance, not only to the architectural profession and the building industry, but to the country at large. The special point of Mr. Simpson's letter is the probable effect of Clause 5 (1) of the Housing (Additional Powers) Act, 1919, which empowers local authorities to prohibit the construction of works or buildings likely to interefere with the erection of houses. It is true that any person aggrieved by an order made by a local authority may appeal to a tribunal of five persons which shall have power either "to annul the order or to make such order in the matter as the local authority could have made," but, even with this right of appeal, we are now back to nothing less than the re-imposition of building restrictions—a remedy for making good the shortage of houses with which we wholly disagree. During the war the liberty of the subject was severely and necessarily interfered with; but now, after nearly two years of peace, we find an important and necessary industry harassed by these fresh restrictions. Houses are urgently needed and we are prepared to make sacrifices to get them, but difficult as the position is from that point of view, it may be made worse by the Clause in the new Act we refer to. Mr. Simpson crystallises what many architects and builders have been thinking for some time past, *i.e.*, that the Ministry of Health, in attempting to grapple with the arrears of housing by restricting private building enterprise, will not further their objects, but will almost certainly cause such an amount of unemployment as will bring the whole structure tumbling about their heads. In other words, the Ministry are trying to achieve the impossible by hoping to divert labour from private building to housing schemes. Labour cannot be moved about from place to place like a flock of sheep, and because it happens to be plentiful in one district where little or no housing is in progress and scarce in another where a housing scheme is in contemplation, this is no excuse for restricting work in the one in order to help in the other. It was tried more than once during the war and failed each time.

We have no doubt we shall be told that only buildings of a low category (*i.e.*, cinema buildings, &c.) are to be prohibited, but we may quote, in this connection, Mr. Simpson's belief in a letter on the same subject in our issue for November 28, 1919, that "if all the projected cinemas were stopped to-morrow, the effect on the housing problem would be imperceptible. The building of hotels—themselves an important relief to congested dwellings—will next be 'controlled,' and churches, too; that of shops will follow (many of these fall clearly into the category of 'luxury'); and once commercial territory is invaded the Bureaux will be neither to bind nor to hold." He now tells us that proceedings are being taken in London and the provinces to prohibit industrial buildings, &c. (categories 2 and 3).

We get an idea how local authorities are likely to act from a published statement of the intention of the Committee appointed by the L.C.C. to deal with the powers conferred upon local authorities, as not only are they to make an order of prohibition in every case of a building falling within the "low category" definition, but "if found necessary, to prohibit operations in respect of some buildings of the 'intermediate category,' and all concerned in the proposed erection of the classes of buildings indicated are advised, in order to avoid undue interruption and unnecessary loss, to communicate their proposals to the Council at an early stage." Definite intention to prohibit the erection of these buildings "if found necessary," is bound to cause uncertainty in regard to their erection, and we have already heard of buildings of this class being postponed or stopped because of this uncertainty.

A new meaning has been given to the word "luxury" not to be found in any dictionary. Mr. Simpson mentions in his letter to the *Times* that "It was authoritatively stated at the time restrictive powers were being sought that they would be exercised only if and when the erection of 'places of amusement' was shown, after careful consideration, to conflict with the relief of housing congestion. But an unsuspecting Parliament having passed the Act, we find all building works classified under three categories. . . ." Thus, in effect, every class of building except housing is to be regarded as "luxury" building! Surely a case of the crime being made to fit the punishment!

We should like to know how the various local authorities who are responsible for carrying out the Ministry of Health's regulations propose to administer them. Will they, for example, allow works in category (1) "Low," already in progress, to be completed? Will such work as decoration work, electric light work, heating installations, &c., which do not employ the ordinary trades required for housing, be classified at all, or allowed to proceed without let or hindrance? Will urgent repairs be permitted? Will any kind of work below a certain fixed limit of expenditure be permitted? Will restoration work after fire be allowed, no matter into what category the work falls? And so on.

We fear that the effect of these restrictions will only be to create another huge army of officials, as it is quite impossible in such a complex industry as the building trade to lay down hard and fast rules as to what shall, or shall not, be allowed to proceed. Each case must be decided on its own merits. Even during the war, when work of only national importance was allowed (thereby ruling out the greater number of buildings), it was with the greatest difficulty that fairness in discrimination was arrived at, and then each individual case was looked into. It seems likely that the result of the Ministry of Health's action will be to stop all kinds of building whatsoever. The new method of allowing local authorities to raise money for their housing schemes by means of housing bonds has already fallen sadly flat. Liverpool, one of the very first to make a public issue, was left with over a third on the hands of its underwriters, whilst the County of Hertford—a county with a very small outstanding debt—had the mortification of seeing only 5 per cent. taken up by the public; and it appears that forthcoming issues will receive even less consideration from the general public. Only the other day we understand that one of the largest corporations in the kingdom had to go cap-in-hand to a smaller town and beg the latter not to make an issue for housing purposes until its own was out of the way. We are thus faced with the fact that whilst much, it may be all, private building enterprise is to be stopped by Act of Parliament, the housing schemes will be held up at the same time by lack of money—a truly Gilbertian situation—but surely only the natural corollary of the Ministry of Health's precipitate and hand-to-mouth methods.

In conclusion, we fear that the only result will be that in a very short time, unless these restrictions are abolished without delay, thousands of skilled workmen, such as masons, shopfitters, metal-workers, joiners, plasterers, &c., will be walking the streets, finding their ordinary avocations closed to them, and yet being of no use in the construction of cottages or workmen's houses. Should this be so, as appears all too likely, it is only one further example of the folly of attempting, by means of artificial methods, to interfere with the operation of the great economic law of supply and demand. Why, of all professions and trades, are architects and contractors selected by the Government for the deprivation of their living? Surely they suffered enough when all building was stopped by the war! We, therefore, hope that in the interests of the public, who want houses, and of men who want work, and architects and builders who after all deserve some consideration, the objectionable Clauses in the new Housing Act will be repealed without delay—that they may, in fact, die stillborn and not be allowed, like the Land Values Act, to exert their pernicious influence for a few years and then having at last to come to an untimely end.

NOTES.

Architectural Association Conversazione and Dance.

On Tuesday last, in spite of showers, there was a large attendance of members and students at Nos. 34 and 35, Bedford-square, to meet their President, Mr. Maurice Webb, and Mrs. Webb. The new halls of the A.A., freshly decorated and hung with imperial curtains, formed a fitting scene for the reception. The guests were received in the large library on the first floor, where airs were played by an orchestra. In an adjoining room, one of those set apart as a club-room, comfortable chairs were arranged where members could sit and listen to the music. In the new class-rooms an exhibition of architectural drawings by French and American students, and by students of the A.A. School, had been arranged, and in the lecture theatre in the basement a musical and dramatic entertainment was presented by the A.A. Lyric Club. Both exhibition and concert were well patronised, and there was plenty to see and discuss on all sides, which early ensured a successful evening. The concert was followed by an exhibition of cinematograph films, made under the supervision of the A.A., illustrating various building trade processes. Refreshments were served in the members' dining-room on the ground floor. At ten o'clock the real business of the evening began for younger members. The new library made an excellent ballroom, and the floor was soon covered with couples, who kept up the dancing until two o'clock. But before that hour arrived ladies who were not looking forward to architecture as a career and gentlemen whose student days were in the past had said farewell to their host and hostess.

Salisbury Cathedral.

The building of Salisbury Cathedral was begun on April 28, 1220, and to commemorate the forthcoming seventh centenary an eloquent tribute is paid by Mr. H. Heathcote Statham to this interesting event in the *Observer* this week. "Among our English cathedrals," said Mr. Statham, "Salisbury has a special claim to stand thus as a representative 'of the greatest of the arts,' inasmuch as it is the only one that was built practically at one time and in one coherent style. All the others display marked differences of style in portions of them built at different dates; an æsthetic discrepancy of the greatest interest in a historic sense, but inconsistent with purely architectural coherence." Another characteristic of Salisbury Cathedral arises from its particularly English setting. Its whole appearance, indeed, is altogether indigenous; the breadth of grass from which it so gracefully rises contrasting in the mind with the different aspect of the French cathedrals, which are often beset so closely on all sides with buildings of a more modest sort. Is it possible that this disparity is a manifestation of some deeper significance, the one symbolising the church as something to be cherished, to be set aside in a "fair, green spot," the other maintaining the church as an ever-accessible refuge set, if need be, beside the humblest dwelling?

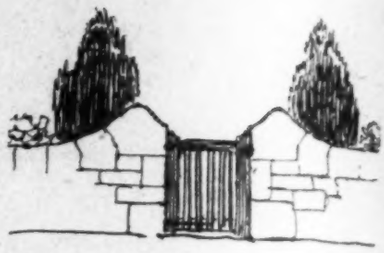
[The above interesting bit of old-time construction (sketched between 30 and 40 years ago) shows the skill with which our old builders gave delightful effects of tone and texture in their work.]

The Fall of a Billiard Hall.

Periodically we have disastrous accidents to buildings which waken the public to the necessity for more constant watchfulness in regard to the continuous stability of both old and new work. The Charing Cross Station was a very unpleasant reminder, and another has been vouchsafed to us in the collapse of the St. George's Hall, at Wolverhampton. It was apparently the roof which was at fault, and the results might have been worse had it not been a one-story building. We sincerely hope the exact cause may be discovered and the lesson laid to heart by all our authorities as to the periodic inspection of buildings for public use.

Labour and Housing.

An additional difficulty which is likely further to delay the housing schemes, and one which does not appear to have been brought forward before, was pointed out by Mr. J. F. Lloyd (President of the London District Council of the National Federation of Building Trades' Operatives) at a conference arranged by the Society of Architects on Monday last to discuss the labour problems in the building industry. The houses passed by the Ministry of Health and in course of erection in some places were, he said, reverting to slumdom, and if the standard were not improved the operatives would refuse to build them. The working classes had quite different ideas as to what constituted a home than they had a few years ago, and they would not be a party to the erection of



An Old Garden Gate.

houses with rooms 8 ft. by 9 ft. by 8 ft. high, with partitions 3 in. thick or with 4½ in. door-jambs, as were provided in some of the approved plans. Mr. Stennett, also of the Operatives' Federation, said that the men had determined not to revert to conditions whereby they had long spells of unemployment, and if the industry became slack still less hours per week would have to be worked by each man in order to make the work go round. We may add that the industry is not likely to become slack for many years to come if it is allowed to carry on without harassing restrictions; and as to the very legitimate desire of the working classes for improved housing accommodation, are they prepared to pay the necessary rent to obtain it?

The British Institute of Industrial Art.

The new British Institute of Industrial Art, the aim of which is to strengthen industry by its co-operation with art, has a difficult task before it. The prospectus contains all those pious affirmations in regard to the necessity for this intimate co-operation with which we have been familiar for years. We shall watch its developments with interest, not less so because it seems only to embody the old "arts and crafts" tradition, and that the names of the Board of Governors suggest this old derivation. We wonder, in the light of obstinate facts, if this "intimate co-operation of the arts" is at all possible at the present time? The old fallacy that you can reach a thing without paying the cost of it, without alteration of outlook and practice; that you can change manners without changing men, still prevails. If our industries are to be vitalised by art, there must be changes within them that are not yet dreamed of. It is not because we wish to develop commerce, but because we desire to promote beauty—a certain aim for one clouded and uncertain—that we shall reach a high standard of quality.

The Guards' Memorial.

The exact position which the Guards' Memorial Chapel is to occupy on the parade is a matter of great moment, and we hope it will not be settled in such a way that the approval of architects has to be withheld. We are glad that Mr. Paul Waterhouse has

entered a timely warning on this matter. In a letter to the *Times* he says "the monument must either be dead central with the Horse Guards archway or, if compelled to be eccentric (for reasons which do not appear), should in no case be so placed that persons entering the archway from the east have their view directed . . . on to one wing of an unduly outspread monument, the uncouth length of which could only be relieved by super-colossal height."

London Improvement.

Important and serious as the matter of London improvement is, we must not forget that for the moment the matter of housing looms up as a more formidable problem than nearly all else, and therefore we should consider most carefully any proposals like those of Mr. Collcutt's for the south side improvement, which would go far to offer some reparation to the working classes for the neglect of their proper housing and also do much to increase our business facilities, together with genuine city improvement We hope none of our readers have overlooked Mr. Collcutt's interesting communication last week and that some may have suggestions to offer.

Skyscraper Climbing.

The occupants of New York's towering skyscrapers are (says the New York correspondent of the *Times*) facing the possibility of having to mount by foot to offices in many cases 30 to 40 stories above the street level. "This situation was created as a result of a threatened strike of lift-operators. They are already on strike in the 55-story Woolworth building. The building houses approximately 10,000 occupants, who had to be accommodated in three of the 24 cars, which were manned by volunteer girl operators. The strike threatens to extend to apartment houses, since the organisation of the operators' union is demanding an increase in pay from £4 12s. to £6 12s. per week." We commend this to the notice of those who favour the erection of similar buildings in London.

Richmond Hill View.

At a recent meeting of the Richmond Town Council it was stated that negotiations were proceeding between Lord Dysart and the Leyland Motor Co. for the purchase of a further 100 acres of land on the Dysart estate at Ham for the erection of workmen's dwellings on garden city lines. It was estimated that about 5,000 employees would be engaged at the Leyland Company's works, which were formerly occupied by the Sopwith Aviation Co. Alderman Hilditch and Sir James Szlumper said that an assurance was previously given on behalf of the Government that this factory would only be temporary, but that now the site was really a second Slough and an eyesore to the district, as it obstructed the beautiful view from Richmond Hill. We are glad to know that it was decided to ask the authorities if the assurance previously given would be respected.

The New L.C.C Loan.

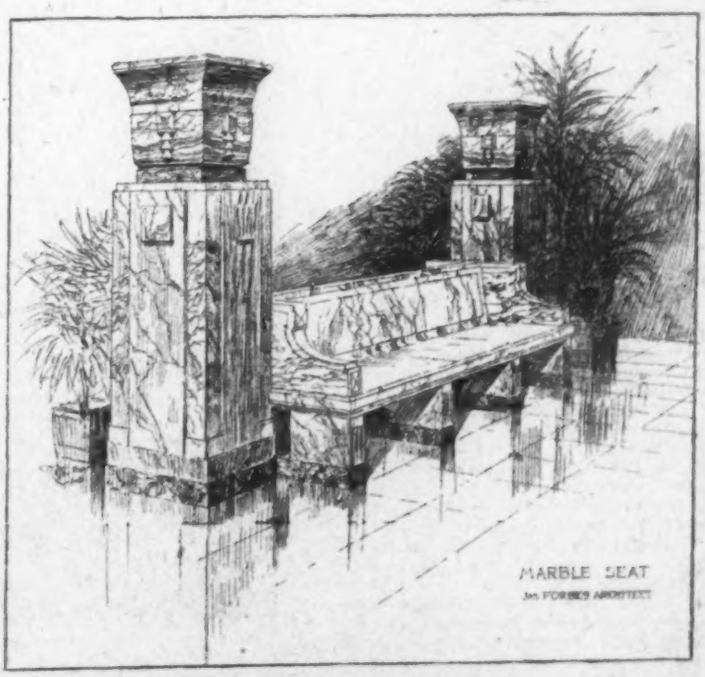
Last week a motion was agreed to at a special meeting of the London County Council to accept the report of the Finance Committee recommending the issue of 5¾ per cent. bonds convertible into L.C.C. stock to the amount of £7,000,000. Some five millions of this sum will be required in connection with housing schemes, while half a million will probably be devoted to education. This is the largest single loan ever put on the market by a public authority. The Council has a considerable sinking fund, and its status enables it to offer financial security in a manner hardly possible for less important bodies. At a time when the campaign in connection with housing bonds is being launched, we feel that publicity should be given to this important issue.

"Honouring the Cheque."

We give on another page an appeal by Col. G. H. Trollope, V.D., D.L., to the building industry on behalf of the Officers' Association in which he is interested, and we do so gladly, as the cause is an excellent one which many connected with the industry who are able, will, we feel sure, wish to make their own. The association of Colonel Trollope's name with the appeal is in itself a guarantee that the object is a worthy one; but a knowledge of the facts which he mentions should make an irresistible claim on our sympathy and support. "Can we who stayed at home and who owe the very existence of our business to these men," says Colonel Trollope, "deny them any help it is in our power to give?" We hope and believe the answer will show that the building industry is not only a prosperous industry but, conscious of what it owes to the men who fought for our existence as a nation, is capable of showing practical gratitude as well

The Building Trades Exhibition.

This Exhibition closes to-morrow and there will, we think, be general agreement that it has served a useful purpose and has been an undoubted success. In congratulating the organisers on this result we may suggest that on future occasions an effort should be made to secure more active support from the bodies representing both architects and builders, who might well follow the excellent example of the Society of Architects in forming a club in the Exhibition for the period of its duration for the convenience of members and friends. The National Federation of Building Trades' Employers or the London Master Builders' Association might well do something on these lines on future occasions in view of the fact that the Exhibition so directly concerns the building industry, and for the same reason they should be more intimately associated in the opening proceedings and with the Exhibition during the period of its existence.



An Exhibit on the Stand of Messrs. Anselm Odling & Sons, Ltd., at Olympia.

GENERAL NEWS.

Professional Announcement.

Mr. Godfrey C. Lambert, F.S.I., architect and surveyor, of 8, Henrietta-street, Covent Garden, W.C.2, has taken into partnership Mr. T. L. Butler, and the business is now being carried on at the same address under the name of Godfrey Lambert & Co. Mr. Butler is a Professional Associate of the Surveyors' Institution, and prior to the war was in Mr. Lambert's office for six years.

The Price of Building Materials.

In reply to a question in the House of Commons last week, Dr. Addison (Minister of Health) said he was aware that the housing problem was being complicated by the high price of materials, and he had received a number of resolutions from local authorities on this point. The whole question of the cost of materials was being investigated by sub-committees appointed under the Profiteering Act. A general committee was dealing with large wholesalers.

Melbourne Technical College.

From the Prospectus for 1920 of the Working-Men's College, Incorporated (The Melbourne Technical School), we note that special attention is being given to vocational training of returned soldiers. In 1919, some 500 of these students attended 38 classes in different subjects. New premises have been added to the College for this purpose, devoted to brass finishing, motor mechanics and motor cycle mechanics, which are at present solely conducted for soldiers.

War Memorial to East Anglians.

The London Society of East Anglians is appealing for gifts towards the cost of a war memorial to the men of East Anglia, to be erected on the façade of the offices of the Great Eastern Railway Co. in Liverpool-street, at a cost of £400. The memorial, 6 ft. in height, has been designed by Mr. Guy Dawber, F.R.I.B.A., F.S.A., and is in Portland stone on a background of black granite. The central panel is surmounted by the arms of the four counties, with the flag of the Society in a shield at the apex.

Outhouses for Cottages.

Writing to the *Times* last week in support of a suggestion that shelters for tools, wheelbarrow, &c., be added to labourers' cottages in rural districts as parts of the plans for the new houses, Mr. Halsey Ricardo, F.R.I.B.A., said that "as matters at present stand, such outbuildings do not come under the purview of the Ministry of Health—being unpermissible on the score of expense. The result, apart from general wide-spread dissatisfaction when this want is actually realised, will be an outcrop of irregular shanties, erected by each cottage occupant as best he can—which, from their inevitably cheap construction, will prove in the short run even a burden and a calamity to its unfortunate possessor, as well as an eyesore to the community."

Health Week.

During the past fifty years rapid strides have been made in the improvement of public health, but to those responsible for promoting "Health Week," for which the first week in May has been set apart, past achievement is merely an encouragement to further effort. It is satisfactory to note that since the late 'sixties the death-rate in England and Wales has fallen from 20.6 to 13.5 per thousand. There is still, to quote Sir George Newman, the Chief Medical Officer of the Ministry of Health, "a vast burden of sickness and disease involving much suffering and the loss of millions of pounds of wages and production every year, and of millions more on expenditure for treatment and insurance"—and this at a time when increased production in every branch of industry is urgently demanded. The need for a "Health Week" during which effective measures to check this appalling waste may be generally discussed is apparent, and the fact that already some three hundred local authorities are considering programmes for the occasion is significant of the interest which the celebration is arousing throughout the country.

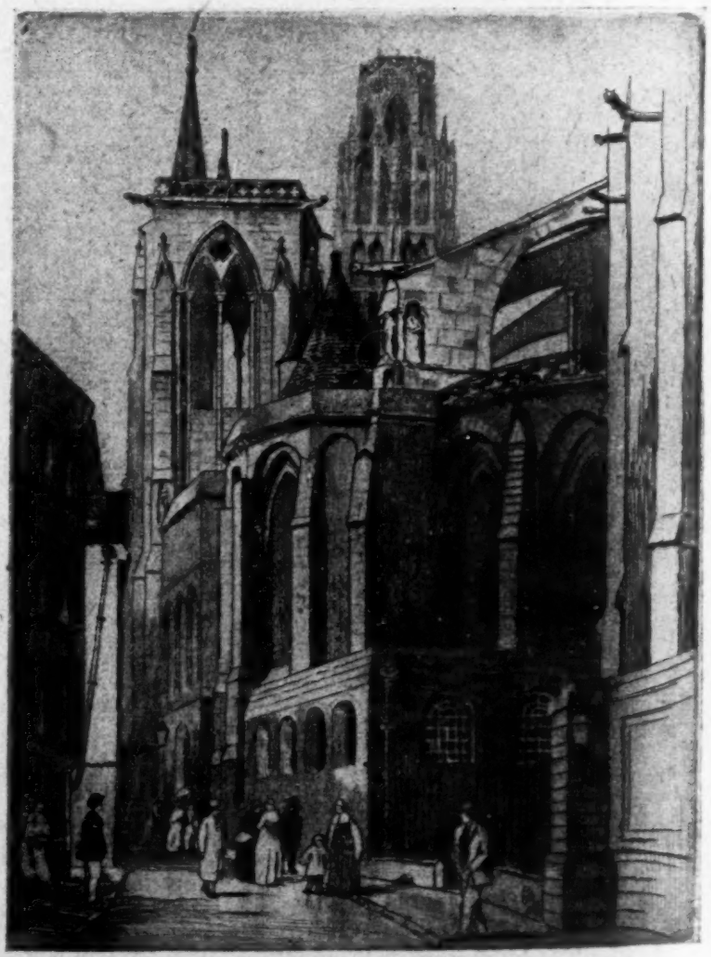
Victoria and Albert Museum.

There has been arranged in the East Hall of the Victoria and Albert Museum (ground floor) an exhibition of the additions made to the collections during the last year or two. Mr. Alfred Simson has given an important example of German sculpture of the early 16th century—a head of St. John the Baptist in carved and painted plane-wood, one of a numerous group of such objects made to be put up in chapels or churches, dedicated to the saint on the anniversary of his Decollation. An example of eastern art is a terra-cotta head of a man, given by Sir Charles Marling, K.C.M.G. This is of Persian origin and dates, perhaps, from the 12th century. The fine 15th century English alabaster altarpiece from Lord Swansea's collection at Singleton Abbey is also exhibited in the East Hall. Among recent additions to the collections of ceramics are specimens of the lustred earthenware made at Chelsea and Fulham in the potteries of William de Morgan; as well as several pots made by Reginald F. Wells at the Coldrum Pottery, Chelsea. Besides these the exhibition includes the bequests of German porcelain from Miss F. A. Bears, and of German and Sevres porcelain from Mr. J. G. Joicey.

A Museum of Safety and Health.

The Home Office has announced that it hopes to open a museum of safety and health in the autumn of this year, and says that it would be known as the Home Office Industrial Museum, and would be housed in a building in Horseferry-road, Westminster. The scheme has been occupying the attention of the Home Office for some years, and the premises which the museum would occupy were specially constructed for it before the war. They were, however, requisitioned during that period for other purposes. The work of arranging the museum was now going rapidly forward. The exhibits would demonstrate the latest and best methods of ensuring safety in the working of various types of industrial machinery. The machinery to be shown would be up-to-date, of full size, and in working condition. Different methods of localised ventilation, for the removal of dust and fumes, would be exhibited, with the most advanced scientific washing and sanitary accommodation. There would be rooms devoted to drawings, diagrams and photographs illustrating what was being done to provide adequate safety guards in factories and workshops throughout the country. Courses of lectures would probably be arranged, and it was expected also that the aid of the cinematograph would be enlisted in detailing the various processes. It would be the first institution of its kind in the United Kingdom, and would embody all the best points of those already in existence on the Continent and in America.

At an inquest on a man killed in a lift accident, Dr. Waldo, the City Coroner, last week stated that he had long advocated the establishment of such a museum.



Rouen Cathedral.—From an etching by Mr. R. J. Angel, A.R.I.B.A.

CORRESPONDENCE.

Dynamic Symmetry.

Sir,—Mr. Hambidge's letter is full of debating points which do not make me wish to modify what I said before. For instance, when I spoke of "Divine liberty" I meant freedom from unnecessary bonds, not licence to be absurd or vile. When I spoke of networks of lines I had the diagrams in the *Diagonal* before me: ought I to have said rectangulation instead of network?

It is suggested that the widths and lengths of Greek structures were incommensurable. This I believe to be contrary to the facts. Thus Michaelis says that the great temple at Samos was 54½ by 109 metres, which he points out is in the proportion "of the width to the length 1 : 2."

In Perrot's Vol. VII there is an enlightening section on hypothetical schemes of proportion. He quotes a mathematician as saying that any two dimensions taken at hazard may be brought together by some scheme or other. Then he gives a scheme for the plan of the Parthenon, in which the mysterious $\sqrt{2}$ appears. However, a pencil note added in the volume I am using says: "Fig. V, intended to show the proportion of the Parthenon, has two errors: the total proportion is 2·25, not 2·34. Also ½ of the breadth added to five quarters of diagonal make 2.51775" (!!)

Mr. Eisen's letter in regard to vases is very interesting. Vases are outside my beat. On the one hand they are simple forms that may be seen at a glance; on the other there are special difficulties of shrinkage, &c. In reply to two remarks of Mr. Eisen's:—When I said that no two experts would be likely to rectangulate in the same way, I had in mind the elaborate diagram of the Greek mirror in the *Diagonal*. When I said masons had other things to think of, I meant: the cost, their instructions, the site, the general type and scale (massive or slender), materials (stone or marble), size and quality of blocks, &c. Any theoretical scheme, it seems to me, must go down before such controlling conditions. I should like to speak of my admiration of Mr. Hambidge's careful studies; something will doubtless result from such devoted work.

W. R. Lethaby.

"Art and Measurement."

Sir,—The writer of the article on "Art and Measurement" (March 19) complacently misses the entire implications of the theories of Mr. Jay Hambidge and avoids facing the facts as skilfully as any modern politician. There is, no doubt, a strongly emphasised bias in all human life which continually defends "the thing that is" in blind preference for it rather than for something which, although definitely proved superior, is unfamiliar. The national British insular habit is compact of the individual habits of the majority; "Here is a stranger, let's heave half a brick at him!" "Here is a 'new' theory; let's heave our traditional conservatism at it!" That is the attitude apparently adopted.

This kind of bland sophistry would not deceive Mr. Hambidge for a moment, but he is well able to look after himself, as we heard at his address at the R.I.B.A. Nobody, it should be noted, got up at the time and made the assertions contained in this article, which cannot delude anyone who has more than a slight and superficial acquaintance with the problems involved in the theory. For this reason I challenge the entire accuracy of this article, which is calculated to lead students, who have not yet had the opportunity of examining for themselves this theory of proportion, to ignore it as beneath notice.

The results of this new-old method, when re-introduced after the long hiatus due to the misapprehension of the none-too-clear passages of Vitruvius, himself a non-successful architect, will revitalise architecture with its attendant arts, and deliver us from the horrible blasphemy of the five orders.

Your contributor makes the initial error of assuming that the theory concerns measurement only. It does not; its chief aim is proportion, by means of a logical architectonic system of measurement by cubic capacities and areas in material; not by line on paper. Among the loose remarks—they cannot be styled "argument"—is one deprecating the "universal mind." As all architecture, in common with other arts, must be expressed in matter which obeys common laws held in the "universal mind," it would appear that the scientific knowledge of such laws would be of extreme utility in the production of "art." Strength of purpose and will are not produced by indefinite aims and erratic methods, and the common empiricism of uneducated minds. Art flourishes, like science, because of the community which contains them both; as products and not causes of civilisation.

"The deep and mysterious sources of human inspiration" do not draw definite lines on solid stone; it is only through a craftsmanship, a technique, a tradition of the handling of material, that matter is subjugated to mind and new forms are fashioned. All this matter demands some kind of measurement and, normally, some kind of proportion, at first instinctive, and later clearly conscious. When they are both instinctive they form rudimentary craftsmanship in "peasant" or "native" or "barbaric art." Out of these science and art grow, "science" being the generic term for systems of measurement together with the natural laws deduced from that knowledge. "Art" is the system of proportion gained from study, conscious or otherwise, of such natural phenomena, from the mineral up to the human body. Measurement is got before proportion, because the one is a unit while the other implies relativity, as nothing can have a proportion merely to itself unlike anything that exists.

Unconscious natural proportion has produced all the wonders of the vegetable and animal world, while conscious proportion has produced the splendour of Greek art. The relapse to measurement and empirical or unconscious proportion gave us the five orders and the terrors of modern "Government Renaissance." The individual egotism of the present time urges us to believe the hollow theory of every artist for himself and the devil take the public; in art, as in economics, there is the vice of "profiteering"—the selfish outlook. There is no sense of the natural national proportion of the individual to the community; we note everything by measure in chaotic modes, and consequently arises the impulse to reject a mode of thought which demands a higher altruistic view.

I will not now occupy more space by taking the many errors consecutively, and will refer to one only. "The Greek vase," says your writer, "was not created through measurement." Possibly not, if we accept the words literally. But its form was arrived at by the creating artist by means of a system of proportion, which provides a choice of a series of proportions of one part to the others, having normal and natural modulations, not dependent on the caprice of any individual artist. This is true also of the Parthenon, which cannot be measured fractionally, but can be proportioned, and had another Parthenon been built by every one of the same makers, the only certain thing is that every proportion would have been different.

W. G. Raffé, A.R.C.A.

School of Architecture and Building, Northern Polytechnic Institute, N. 7.

Basis of Assessment for Rates.

Sir,—If a man decides to build a small house or cottage for his own occupation at a cost of £1,000, what is the basis of assessment for rates to be? Inquiries have been made from a local authority, but have not elicited a satisfactory reply. Five per cent. on the cost has been hinted at; with rates at 20s. in the pound, which is now foreshadowed in many towns, it would result in the owner and occupier paying £50 per annum in rates for a cottage.

If the Minister of Health could give some guide on this matter it might help to clear up a very doubtful point and assist housing.

"Architect."

Economics in Relation to the Present Crisis.

Sir,—As a regular reader of your excellent paper I have read with some interest the letters appearing under the above heading. It now seems to be recognised that the system of payment by the hour does not make for continuous employment but, on the contrary, tends to make employment more casual. This uncertainty of employment is, in my opinion, the chief cause of trouble in the building industry.

Some months ago, in the hope of helping the ex-soldier and at the same time reducing the shortage of labour in the building industry, I ventured to ask the local Technical Advisory Committee of this city, of which I am a member, to pass a resolution on the following lines:—"That the attention of the Ministry of Labour be drawn to the position of *fit* young men who, on joining H.M. Forces, were under 21 years of age and, if employed at all, were engaged in industry without prospect of becoming tradesmen. In view of the fact that the building industry is in urgent need of able-bodied men, this Committee suggests that carefully selected men be granted training under a scheme similar to that which embraces only *disabled* men." I supported this to the best of my ability, but the trade union representatives were solid against it, giving as a reason the fear of unemployment later on, and arguing that there was no shortage of men. Is not the shortage now admitted on all hands?

As a remedy for many of the troubles in the building trade, particularly those arising from the casual method of engaging men, I suggest that in the place of the present unemployment stamp and the payment of premiums for insuring against accidents, a scheme should be adopted whereby every builder should stamp a book with one stamp of sufficient value to cover the two misfortunes. Thus, if a man were proved to be unemployed through no fault of his own he would be entitled to the same weekly compensation as he would be if he had met with an accident through no fault of his own. This could be worked by the large insurance companies, who have the necessary facilities. If it only did away with the haunting fear of unemployment, it would serve a great purpose. Such a scheme being instituted, it would, in my opinion, put an end to the opposition of trade unions to ex-soldiers. It should not prove a costly arrangement; in any case, no one would have to pay except for those actually employed, and there is little fear of unemployment for years to come. Therefore, the present seems an opportune time to institute such a scheme, as it could be done at a reasonable cost and in a few years would build itself into a strong position, which it could not do if started when unemployment was rife.

Walter Smith,
President, Norwich Master Builders' Association.

Restoration of a Fifteenth Century Building.

A fifteenth century building near Colchester Town Hall has been restored by Mr. Duncan Clark, A.R.I.B.A., who has revealed all the ancient carving and timber work. The building was formerly used as a dwelling house, and is now occupied as offices.

ACOUSTICS OF BUILDINGS.

By H. Bagenal, A.R.I.B.A.

In view of the results of the American physicists, Sabine, Watson, Swann, and others, corroborated by Jäger in Germany, and successfully applied to the design of auditoria in the United States, there should now be no excuse for a despondent attitude on this subject among English architects.

What are these results, and how can they be carried into practice? They can be grouped roughly under three main heads: first, that the faults of existing auditoria, when analysed, can almost invariably be related to the phenomenon known as reverberation, that is to say, to the length of time which a sound once emitted in a room takes to die away; second, that the process of dying away or "rate of decay of sound" in a room for a given pitch varies with (*a*) the volume enclosed by the bounding surfaces of the room, and (*b*) the sound-absorbing power of all its surfaces and the surfaces of all its contents, such as furniture, fittings, upholstery, audience, &c.; third, that the materials employed in building, fitting, &c., and also members of the audience, have ascertained co-efficients of sound-absorption capable of being employed in practice to calculate beforehand a suitable reverberation for a room of given volume.

Reverberation as a time value measured in seconds is not a discovery. Organists unacquainted with the Harvard experiments have long been used to speak of the reverberation (sometimes wrongly called resonance) of St. Paul's as twelve seconds, when empty, of York Minster as ten seconds, of Leeds Parish Church as one-and-a-half seconds, and of using such figures as a rough standard of comparison. The effects of reverberation when its duration is extreme are easily recognisable. It is almost always difficult to follow a discourse twenty feet from a preacher in a large church, when the words are not familiar. This is because owing to length of reverberation each syllable when once uttered is liable to last for two or three seconds and to overlap the succeeding syllables. Another illustration is the case of listening to a fugue on the organ at the Albert Hall with a small audience present. In a fugue it is important to hear the sequence of the notes clearly in order to follow the progress of the theme. Also, the various melodies advancing at the same time depend on the accurate conjunction of notes (under the laws of counterpoint) in order that they shall sound harmoniously. But a listener in the Albert Hall during a rapid fugue hears not only the proper assembly of notes for a given moment, but, added to them, other notes prolonged from the preceding bar. In other words, owing to the reverberation, musical accuracy of effect is impossible in that auditorium.

In designing for the speaking voice, where the range of pitch is small, the problem of reverberation is in theory comparatively simple. The aim should be to reduce the reverberation to a minimum; but the practical difficulties increase with the size of an auditorium. On the other hand, for concert requirements the large size of an auditorium does not disproportionately increase the difficulties of practical solution, but the theory of what reverberation is suitable, involving as it does the fact that reverberation differs with pitch, is a more intricate problem. Also, some definite musical standard of taste is required as a basis. But Sabine recognised that requirement as long ago as 1898 and took means to investigate it. In the *Proceedings* of the American Academy of Arts and Sciences, June, 1900, he says: "The experiments described in this paper . . . were so conducted as to give a measure of the accuracy of cultivated musical taste. The latter point is obviously fundamental to the whole investigation, for unless musical taste is precise the problem, at least as far as it concerns the design of the auditorium for musical purposes, is indeterminate." The first observations on this point were made by Sabine as early as 1898 while he and McKim were planning the new Boston Symphony Hall; but without enumerating, it here concerns us to know that what Sabine had established at the time of his death in this as in other matters is not disputed by the latest authorities, but is practically accepted as the foundation of all acoustic design. Thus, for large concert rooms a reverberation equal to that of the Gewandthus at Leipzig, namely 2·3 seconds (with a full audience present) is desirable; for piano music in an auditorium of moderate size (full audience), 1·1 second; for the speaking voice a reverberation as short as possible compatible with adequate sound intensity throughout the auditorium. From these standards it may be seen how impossible it is to attempt to combine satisfactory conditions both for the speaking voice and for concert music.

The relationship of the reverberation to the volume of the auditorium is easily perceived. The rate of decay of a sound once emitted in a room depends on the number of reflections per second, since, neglecting the viscosity of the air, dissipation of energy occurs at every reflection. As sound travels at a uniform velocity it follows that the larger the room the fewer the reflections per second, and therefore the longer the duration of time before the intensity of a sound becomes exhausted. In other words the larger the room the longer the reverberation. But a standard intensity must be used for purposes of quantitative comparison; and in the American experiments made with a view to practical results Sabine's original organ pipe intensity of a million times the minimum perceptible audibility was used. The reverberation then varies *directly* as the volume of the room. It varies *inversely* as the sound absorbing power of its surfaces and contents. This follows from the same fact of the dissipation of energy at reflections. Consider a room forty feet square, a sound travelling at 1,100 feet per second will make 27 reflections per second. When a ray of that sound strikes a surface, part of its energy is absorbed in the texture of the material and part reflected, but with diminished energy, into a new path. It will continue along the new path until another impact occurs when the process is repeated, and so on until its energy is completely absorbed. Obviously the greater the amount and effectiveness of the surfaces capable of absorbing energy the more rapidly will the energy be dissipated. In other words, the greater the amount of absorbing material present the shorter will be the reverberation.

These initial facts, namely that t the reverberation in seconds varies directly as V the volume and inversely as A, the total number of units of absorption present may be written down thus:—

$$t \text{ varies as } \frac{V}{A}$$

$$\text{or } t = \frac{V}{A} \times k \text{ (a constant).}$$

Even as they stand, however, useful deductions can be made from them. In the designing of an auditorium a cardinal point should be a minimum volume consistent with the necessary air space. The larger the volume for purposes of architectural effect (*e.g.*, a dome or barrel vault) the greater the amount of absorbing material such as carpets, curtains, panels of felt, or plaster without a finishing coat will be necessary for a required reverberation. Also, on the shape of the auditorium depends the area of its bounding surface and therefore of its absorbing power. If we call this total amount of bounding surface S, and the volume V, the ratio S to V plays an important role. The greater this ratio becomes the shorter becomes the reverberation and *vice versa*. The smallest value of S/V for a fixed volume is that given by a hollow sphere, which accounts for the noticeable reverberation in domes and specially in domes of large size, for with an increase of radius the value of S/V decreases. From this ratio S V may be also perceived the use of reliefs, breaks, and heavy mouldings, to decrease reverberation by increasing S for a given volume. The absorbing values of materials will be examined in a later article.

Memorial Tablet at the French Protestant School of London.
Designed by M. Adrien Montagu.

THE COLUMN.

The column, the post, the strut and the stanchion have a similar duty to perform—which is the carrying of a dead weight; yet the foremost bears a charmed name which raises it into a higher caste than the others. From the simplest and most elemental of structure forms it was developed into, perhaps, the most perfect expression of the building art, as beautiful as the subtle lines of a human limb compared with the wooden stump of a cripple. This analogy to the human form is very suggestive of a right understanding of architecture. It is action and purpose which determine the development of human muscles, and the beautiful body is the one in which the superfluous is eliminated, and matter built up where needed and in proportion to its need; this, surely, is the very aim of architecture, and the measure by which success or failure is gauged.

To take a column of the Parthenon to illustrate such a point needs no apology, for the architect turns to that masterpiece as the good Christian to his Bible—with reverence and the certainty of unsounded depths of knowledge to be explored. The range of beautiful columns stands with a purpose, which is to bear the weight of the superstructure, and through each column passes a living force, which is the origin of the outward expression which the eye appraises as a thing of beauty.

The student who is not yet sensitive to the lines of beauty may sometimes doubt the sincerity of the eulogy which is poured from all sides upon the Parthenon. He is mystified by its very simplicity, and turns with a keener appetite to the intricacies of Gothic tracery or Byzantine mosaics. It is then that the vital forces in the simple lines of the building may be traced with most advantage, to give a greater confidence in the purer instincts and a better understanding of the real significance of beauty.

Look, first, at the abacus, square and string, bearing upon its central mass its full appointed load. Then the echinus, drawing in from this square form and concentrating the load upon the circular top of the shaft. The upper edge, which nature would have crumbled and cast off as useless, is rounded, a striking instance of that eliminating of the superfluous which we have noted as an essential of beauty. Passing down the shaft the load is ever increasing by the addition of the column's own weight, and in proportion the bearing surface is increased. But this is not all, for the shaft, held rigid at top and bottom, is most liable to fracture between these extremities. This introduces the entasis, which corrects architecturally the weakness that would otherwise appear.

We know that an undiminished column appears wider at the top than at the bottom, and that one without entasis appears hollowed in profile. Whether one calls these phenomena optical illusions, or what one will, they are purely instances of the artistic eye subconsciously searching out weakness and superfluity. The Greeks corrected these with optical refinements, or, in other words, they arrived at a faithful expression of the essentials of the structure. There is a kinship between the conic curves of Greek mouldings and refinements and those of well-known static diagrams that may be more than a coincidence. At any rate, it suggests that there may be a way out of the confusion of modern design through a more careful and intimate study of modern construction.

To-day, the real columns of our buildings, that is to say, the actual structural supports, are the steel and reinforced concrete stanchions and piers. A good many architects know little or nothing of their true nature and the static laws which govern their design. If the architect is not content to draw his information from a trade catalogue, his scientific knowledge is too often confined to the use of a few formulæ applied without much intelligence. It is the fault of our educational system. The artist by nature does not take kindly to science, but in an art so definite and concrete as that of architecture discipline is the more urgently needed. The student is encouraged, and rightly so, to study the past, and to search out the great everlasting principles which kept his art alive and healthy through the ages. He is encouraged to make compositions out of his own ingenuity, for only so can he appreciate the laws which are to govern him. But that is not enough; for until he has studied to the uttermost the laws of structure with which he will have to deal to-day, he cannot fully apply the principles he has learnt with the faithfulness that produced classic masterpieces in the past.

Is it too much to hope that a generation or two of study on these lines may produce a ferro-concrete column sufficiently beautiful to be left in the nude and not hustled ashamedly into a ready-made suit of Portland stone or plaster, eight, nine, or ten diameters high, as may be, or that some fitting garment may be evolved to protect and express rather than hide the steel stanchion? Only so can one foresee the pulse of architecture beating again in health and strength when science and art leave their separate ways and converge to a common goal—which is perfection.

G. M. Aylwin.

The Definition of "Working Classes."

The recent judgment in the Marylebone County Court, upon an application to convert a large private dwelling at Porchester Gate into two or more tenements, that the Housing and Town-Planning Act referred only to houses for the working classes, was raised by Sir J. Norton-Griffiths in the House of Commons last week. He asked the Minister of Health to alter the law in this respect, and urged that housing accommodation for all classes of the community was very short. Dr. Addison said he would consider whether it was desirable or necessary to take any action in the matter. Mr. Billing invited the Minister to define the phrase "working classes," but Dr. Addison declined the task.

From *Architecture.*

Design for an Australian War Memorial.

By Mr. W. L. Bowles.

[The above memorial, designed for Australian use, was exhibited at the recent Royal Academy War Memorials Exhibition in London. The symbols on the band are those of the Australian States.]

ARCHITECTURAL SOCIETIES.

THE NORTHERN ARCHITECTURAL ASSOCIATION.

At a recent meeting of the Association, Mr. Nathaniel Lloyd, O.B.E., delivered a lecture entitled "Some Right Ways, Some Wrong Ways, Some Suggestions." Mr. Lloyd said he believed that the next best thing to getting a thing right was to know what was wrong. He suggested it was as necessary for architects to take stock of their ideas as for a merchant or manufacturer to take periodical stock of his goods. A large number of slides, showing the application of the principles advocated to workmen's dwellings, illustrated the lecture.

After touching upon one or two of the salient features which have been developed by recent study of town planning, and upon the placing of buildings on sites, he discussed the merits of emphasising vertical or horizontal divisions of façades, according to site. This led to the question of good and bad divisions and to the consideration of proportion in the most comprehensive as well as in the restricted sense. He claimed that, although all concerned were agreed as to the importance of proportion, works executed showed remarkable and general disregard of this factor. He supported this view with illustrations and through a series of slides showed the relative value of various features on the same building, resulting in a complete metamorphosis from mere utilitarianism to sound architecture. Mr. Lloyd then showed right and wrong treatment of roofs, chimneys, central features, doorways, windows, walls and some of the materials most in use.

In mediæval articles of apprenticeship was a clause that the apprentice should not divulge his master's "secrets." The "secrets" in question were not personal or domestic matters; they consisted of right methods and ways of doing a multitude of little things. It was to learn these that the apprentice was bound, and so important were they considered by the master that he took every possible step to ensure they should not become common property. Most of these "secrets" had been lost by the tradesmen.

At the annual general meeting of the Association, held last week, the following officers were elected for the ensuing session:—

President: Mr. C. S. Errington, F.R.I.B.A.

Vice-President: Mr. T. R. Milburn, F.R.I.B.A.

Hon. Treasurer: Mr. J. T. Cackett, F.R.I.B.A.

Hon. Librarian: Mr. F. M. Weightman, Lic.R.I.B.A.

Hon. Secretary: Mr. G. T. Brown, F.R.I.B.A.; Assistant Secretary: Mr. G. H. Gray, A.R.I.B.A.

The following were elected to the Council: Messrs. K. Glover, C. I. Greenhow, Lic.R.I.B.A., N. E. Leeson, A. K. Tucker, A.R.I.B.A., and I. W. Taylor, as members; Messrs. G. E. Charlesworth, T. Harrison, M.S.A., and W. Milburn (junior), A.R.I.B.A., as associates.

THE SOUTH WALES INSTITUTE OF ARCHITECTS.

The annual dinner of the South Wales Institute of Architects was held at Cardiff last week. Mr. Ivor P. Jones (President) occupied the chair, and among others present were the Lord Mayor, Mr. Arthur Keen, F.R.I.B.A. (Hon. Secretary, R.I.B.A.); Mr. G. C. Lawrence, President of the Bristol Society of Architects; Sir Charles Ruthen, O.B.E.; Mr. J. Cook Rees, Neath; Mr. A. W. Julian, President of the South Wales Building Trades Employers' Federation; and Mr. G. E. Halliday, Cardiff, Secretary.

Mr. Arthur Keen, responding to the toast of "The Royal Institute of British Architects," referred to the collection of buildings in Cathays Park, and said that he knew of no place which could compare with Cardiff in this respect; it was a thing for every citizen to be proud of. The one thing however, that disturbed him was that the buildings were nearly all designed by London men. He failed to see why provincial cities should not trust their own architects to do the work. How could they expect local architects to qualify themselves to do fine things if they did not get an opportunity of applying their skill after acquiring it? This could be rectified by having a well-conditioned school of architecture in the city, and he was glad that Cardiff had made a move in this direction.

The Lord Mayor said they had made an excellent beginning at the technical school in connection with architectural education. He felt that, given a site such as they had in Cathays Park, it was incumbent upon the governing body of the city to see that they had the very best the country could give them.

Sir Charles Ruthen proposed "The South Wales Building Trades Employers' Federation." He said that the housing problem was a serious one, and if they were to get out of the terrible hole they were in, master builders, operatives, and architects must pull together.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.

Mr. George F. Beckett (President) occupied the chair at a meeting of the Architectural Association of Ireland last week, at Dublin, when a lecture on "The Future of Architecture" was delivered by Professor A. E. Richardson, F.R.I.B.A., Principal of the School of Architecture, London University.

Prof. Richardson said that to the architects of to-day had fallen the herculean task of reformation. Their purview of architecture now included the masterpieces of the ancient civilisation of the East, whence they read lessons of expression on a vast scale. From the monuments of Greece they learned the value of standardisation of type and detail, while the result of centuries of evolution could be studied. From Rome they gained the theory of embodying type and detail from earlier sources into conceptions of the first magnitude and complexity. Finally occurred the re-birth of the Classic spirit in Italy. The Renaissance in Italy witnessed the evolution of definite types of building. In these days it became necessary to encourage a study of the underlying principles of Gothic architecture, but, regarding the future, they would not find the solution of problems in the exploitation of any one style, or any particular fashion. Architecture, if it was to be anything better than mere building, must be above fashion; it must be stylish of itself; it could and must follow tradition, even when necessity demanded its expression to be local or regional. Modern American work owed its excellence to a very close observance of tradition. To-day the Classic spirit or the universal tradition was accepted as the driving power at the back of modern methods of design.

After all, the architecture that affected the people, that directly represented their lives and ambitions, concerned the design of the houses, and that was the kernel of the whole subject. They might well ask how did tradition attend the subject of domestic architecture, but nevertheless it did. Much had been done to improve housing conditions in country districts. Still more remained to be accomplished by the artists who had little reason to be ashamed of the magnificent traditions of the national architecture. The cottage tradition of Ireland clung to the bungalow type—it was a tradition shared by the cottages in Scotland and the smallholder in the West of England.

While advocating the adoption of universal tradition for civic architecture, he would have designers study the necessities of localities. There must be the architecture of the city, with its various divisions, ranging from the civic centre to the commercial and educational quarters, the districts of the professional classes, the various residential centres, and from those to the suburbs. The type of buildings suited to country towns must be studied, also the especial or regional types of domestic buildings suited to the village, or to the purposes of farms or small holdings. Nothing expressed the character of a nation more than the aspect of its buildings. It was from the seemingly stern façades that they obtained their best and lasting impressions. In the architecture of Dublin was reflected the soul of the national tradition.

EXHIBITIONS OF THE WEEK.

The L.C.C. Schools of Arts and Crafts.

If there is a good deal of work done by students at the L.C.C. Schools of Arts and Crafts approaching the quality of what is now on exhibition in Southampton-row, we have cause to be very grateful for the influences which are at work to produce it. We have probably never seen a higher average of quality in such an exhibition there, and it is obvious a high standard is aimed at by teachers and students. It is difficult to particularise amongst the modelling, etching, pottery, metal work, jewellery, binding and lettering. If we see any room for useful comment, it would be that we would like to see more of a simple and less elaborate type in the craftsmanship, not only because it is more widely needed and useful, but also because it makes a surer foundation to be doing very simple things well. Unrealised dreams of precious work have their value, but it is great art to do simple stuff in such a way as to give a lasting pleasure. We cannot too heartily wish success to the schools. We hope, before long, to see exhibits of the other departments of the school work, architecture, fabrics, etc., which are not included in the present collection.

Royal Society of British Artists.

The galleries of the R.B.A. have a more distinguished air than they have ever worn, with dark carpeting, purple upholstery and gilded chairs; the pictures are well hung, too, and no exhibitor can have reasonable complaint of a bad hanging. One's attention is arrested by the splendour of purple in Fred F. Foottet's "Orchard, Vale of Lorton" (215); this shows a fine breadth of purple hills seen over an orchard with pale pink blossoms and a foreground of grass and yellow flowers; if we find a little hardness in the presentment of the fruit trees, we have nothing but appreciation for the fine decorative effect of the picture, than which this artist has probably done nothing better. A great contrast to this is the "Autumn," by C. H. Padwick, in mellow browns and greens and yellows; a little too disturbing in detail, but harmonious and pleasing. A further contrast to this is to be seen in "South Down Breezes" (206), by J. Littlejohns, which is a vivid realization of sun and passing clouds. A telling quality of sober breadth is obtained in "Nightfall Redesdale" (202) by the Hon. Walter James, which is a very skilful interpretation of dying lights. Quite an exceptional picture of light and colour is Leonard Richmond's "Early Morning in September" (171) but the early morning has made the hills a little too jumpy for quite pleasant composition. "The Silent River" (261) by C. A. Hunt, has a somewhat rare quality of singularly peaceful expression. Several landscapes more or less arrest one, as numbers 194, 187, 188, 185, 179, and 178. The President's small picture of "A Madonna of the Fields" (153) is a charming illustration of motherhood. There are several noticeable things in the other rooms, such as "Spanish Hills" (216), by Hirst Walker, waiting to be translated into coloured glass, 238 by Nora England, 236 by F. Hamilton Jackson, and Nos. 290, 297, and 319. A charming little watercolour of French-roof, St. Albans (77), by A. Warren Dow, "Ruins, Bolton Abbey" (52), by Percy Lancaster, and a charming study of buildings on the Ouse (7), by Chas. Ince, are a sort of rebuke to the coarse, unfeeling representations of architecture amongst other drawings in the N.W. Gallery. But the careful drawings of Chipping Campden, 130 and 134, by Walter S. S. Tyrwhitt, and a clever picture of "Staple Inn, Holborn," by Barry Pittar, are worth noting.

SLOW BUILDING.

The following letters on the need for freedom from restrictions and control in the building industry and the increase of wages as a factor in the cost of building, appeared in *The Times* of Monday last. The subject is referred to in our leading article this week.

"Sir,—We are, it is to be feared, about to see widespread unemployment in the building trade, and that among its steadiest and most highly-skilled artisans. Work, despite high prices, is waiting in abundance, but the persistent desire of Government officials to continue and extend their interference with the normal working of this most complex industry has hindered its revival ever since the Armistice. Although losses due to the war and other causes have reduced the number of men engaged in building by nearly one-fourth during the last five years, they are still not fully employed, and many more must be deprived of their livelihood by the operation of the Housing (Additional Powers) Act of last December.

"The national housing question is urgent; every patriotic citizen recognises its importance, and the Royal Institute of British Architects (loyally backed by the Society of Architects) is doing, and has done, its utmost to help in the erection of houses; yet progress is lamentably slow.

"Broadly speaking, arrears of housing are still untouched, the building in hand hardly corresponds with the annual increase in demand for accommodation. The Building Industries' Consultative Board (whereon architects, surveyors, operatives, and employers are equally represented) long since pointed out where the obstruction lay, and insisted that the industry should be 'free from the control and interference of officials and enjoy the full liberty to manage its own affairs which it possessed before the war.' Their protest, supported by correspondence in the technical Press, was unheeded; the Ministry of Health, panic-stricken at its failure to produce houses in its own way, armed itself with yet more drastic powers, hoping, by the prohibition of every other kind of building, to force all the industrial rivulets into a single narrow channel of housing. The policy is as hopeless in practice as it is unsound in theory; to obtain a stronger current, the tributary sources must be fed to overflowing until a general flood of building quickens, in its turn, the sluggish stream of housing. To change the metaphor, the building industry is an immense and delicately adjusted machine, and increased production cannot be obtained from one part of it by clogging the wheels in another part; but it is easy to cause hideous disorganisation, and disturbance in the building trade, which is connected with, and reacts upon, every part of our social and economic system, is especially dangerous.

"We are now face to face with the result of the Ministry's action. It was authoritatively stated at the time restrictive powers were being sought that they would be exercised only if and when the erection of 'places of amusement' was shown, after careful consideration, to conflict with the relief of housing congestion. But an unsuspecting Parliament having passed the Act, we find all building works classified under three categories: (1) 'Low' places of public amusement, cinemas, &c.; (2) 'Intermediate,' works 'not immediately necessary,' including shops, warehouses, stores, and factories; (3) 'High,' such industrial buildings as cannot be prohibited 'without most serious consideration,' works such as will produce increased employment and local or national revenue.

"We need not trouble for the moment about the first category, under which many buildings have been stopped. But categories 2 and 3 are now attacked, and proceedings taken, both in London and the provinces, to prohibit industrial buildings which would produce increased local and national revenue. While, therefore, loans are being raised by the local authorities (with the aid of underwriters), their rating security is at the same time being diminished. Nor will the new houses be a source of income to defray interest on the loans; not only do the rates on such small property barely cover the yearly expenditure on its roads, lighting, collection, &c., but it is out of the question to obtain really economic rents. Local authorities will, in many cases, stand at an actual loss of £40 to £60 per annum on every house they erect. The position is most serious; those who contemplate commercial building operations must realise that they proceed at the risk of being stopped, and it should not be forgotten that no rates are payable on unfinished buildings and vacant sites.

"It is, however, of the imminent peril of unemployment that I especially wish to warn your readers. There is no place for the highly skilled class of operatives in cottage building, which could, in practice, be executed almost wholly by labourers. A little joinery, a still smaller amount of plumbing, is all the skilled work that can profitably be absorbed. The steelworkers and erectors, stonemasons, hardwood joiners, cabinet-makers, shop-fitters, marble masons, bronze and other art metal-workers, fireproof floor constructors, carvers, fine plaster modellers and casters, together with scaffolders, crane-drivers, and the men of an infinite ramification of dependent manufactures, will presently be walking the streets if these 'luxury buildings' ('give a dog a bad name') are to be prohibited. The operatives I have indicated are unfitted for outdoor work on cottages, for the most part they are 'indoor' hands; nor, unless the Government proposes to conscribe labour, can they be transferred to other districts than their own.

"It is not to be wondered at that the spectre of unemployment still haunts the building trade; nor will it disappear until operatives are convinced by the object-lesson of universal building activity that the industry is really prosperous. Housing schemes will move briskly when labour is attracted to building and the trades recruited far above their present strength. Nothing will effect these ends but the stimulation and encouragement of every kind of building enterprise.

"John W. Simpson,
"*President, Royal Institute of British Architects.*"

Wages in Building.

Sir,—In *The Times* yesterday an announcement appeared that the building trade operatives are demanding an increase in their rate of wages to 3s. per hour for mechanics and 2s. 9d. for labourers. This increase, if granted, means a 50 per cent. advance on the wages now being paid. May I point out briefly what a serious matter this is? For example, the cost of houses to be erected under the various 'housing schemes' in the metropolitan area has now been ascertained to be about £1,150 per house at present prices. Half of this cost may roughly be taken to be for materials and half for labour. With this 50 per cent. increase of wages the additional cost per house will be £250, making a total of £1,430, but, as there will doubtless be a sympathetic advance in the cost of materials, it would not be unreasonable to anticipate that the eventual cost of each house may reach £1,600. The County Council proposes borrowing the money to pay for these houses at 5½ per cent. The economic rent, therefore, would seem to work out at £92 per annum. Other building operations will, of course, be affected to the same or a greater extent as regards cost.

"A London Builder."

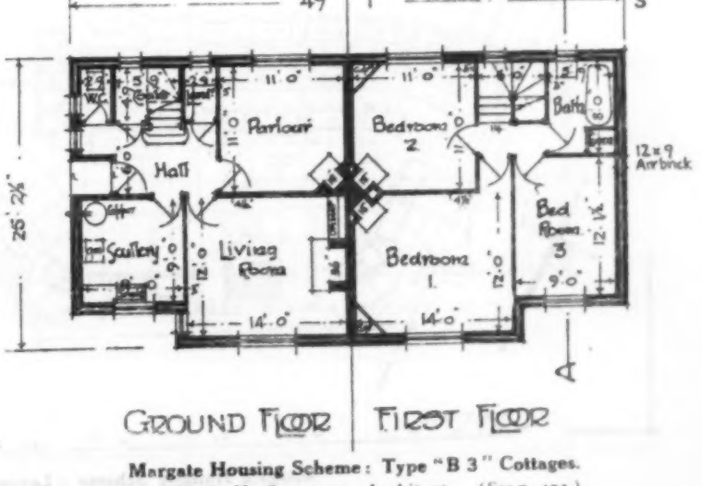
ARCHITECTURAL ATELIERS.

The several architectural ateliers in London, as stated in the *Builder* last week, are about to be federated, and the conditions of entry, scheme of organisation and system of education standardised, so that while each atelier will retain its independence and separate existence under the direction of its Patron, it will be one of a group affiliated with the Royal Academy. The following are the conditions of entry:—

Admission will be by examination only, to include design, drawing, modelling, mathematics, archæology, and oral examination. Application must be made to the Hon. Secretary, Architectural Ateliers Committee, 34, Bedford-square, W.C. 1.

Candidates qualifying by examination will be admitted to full membership, be able to participate in all competitions, &c., have the advantage of the assistance of the Patron and Sous-Patron and be admitted free to the Architectural Association and University College life classes. Other students may be admitted contingent on their passing the full membership examination. They may use the atelier, but will not be entitled to claim the assistance of the Patron or Sous-Patron, and will not be eligible to have their work submitted for competition. The maximum number of students in each atelier will be thirty.

Bi-monthly exhibitions and criticisms will be held, and a yearly exhibition of prize drawings, which latter will become the property of the Royal Academy Ateliers. The jury will consist of Sir Reginald Blomfield, R.A., and Mr. G. Gilbert Scott, A.R.A., and the Patrons of the various ateliers belonging to the Royal Academy group—Messrs. A. J. Davis, Patron of the First Atelier; Professor Richardson, Patron of the University College Atelier; and Mr. R. Atkinson, Patron of the Architectural Association Atelier.



Margate Housing Scheme: Type "B 3" Cottages.
Mr. W. R. H. Gardner, Architect. (*See* p. 492.)

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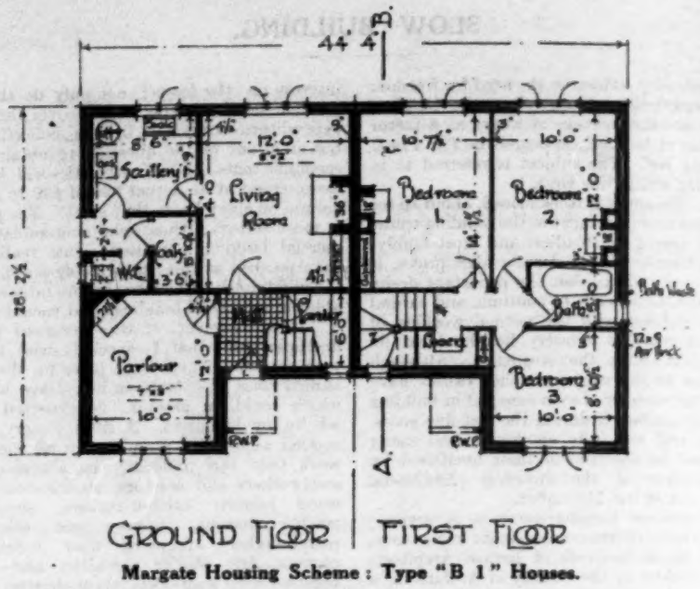
ILLUSTRATIONS.

Memorial at Whitchurch.

This memorial is being carried out in Hollington stone at Whitchurch, Salop, from the design of Mr. F. Howarth, Brynmair, Towyn, Merioneth, which was selected in competition.

Chancel Screen, Parish Church, Rickmansworth.

This screen, completed and consecrated in December last, was erected by Mr. R. W. Henderson, J.P., as a memorial to his wife who, with him, had worshipped in the church for 53 years. It was intended, having regard to the difficulties arising from the war, to construct the screen in American oak; but the contractor, happily, was able to obtain a parcel of excellent Austrian oak which had been in this country some six years. The church was very completely restored some years ago by Sir Arthur Blomfield, and the new work harmonises well with it. Messrs. Gilbert Seale & Son, of Camberwell, carried out the work in a most satisfactory manner from the plans and under the superintendence of the architect, Mr. Spencer W. Grant, A.R.I.B.A., of 31, Craven-street, W.C.2. The illustration is from a photograph by Messrs. Bedford Lemere.



Margate Housing Scheme: Type "B 1" Houses.

Aberdeen Students' Designs.

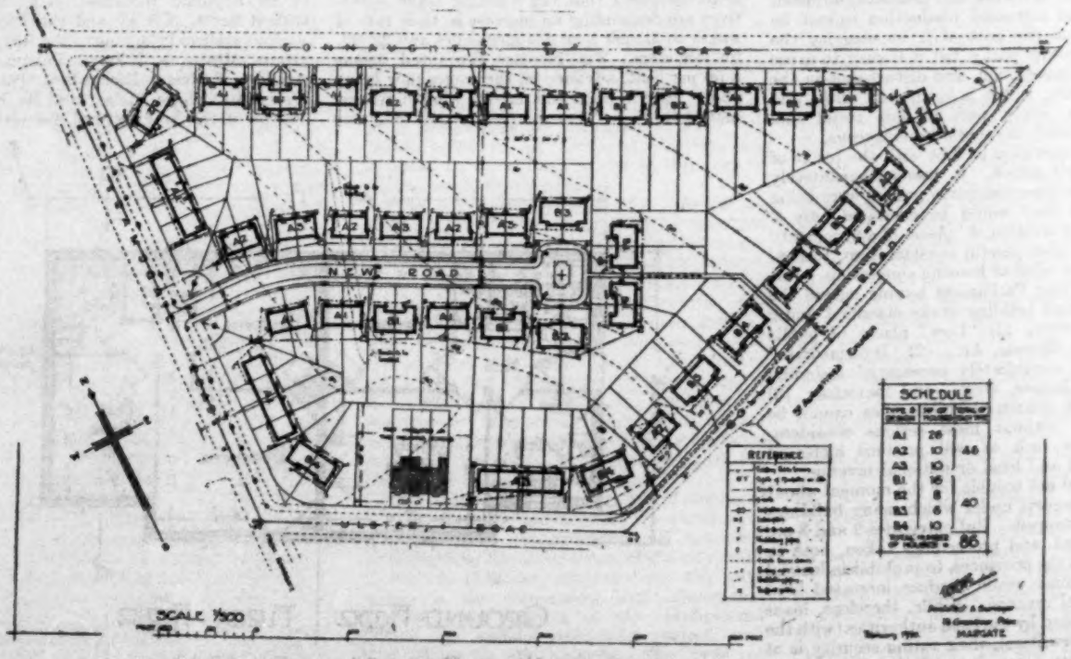
The School of Architecture, Aberdeen, is under the management of the Governors of Robert Gordon's Technical College. The School was founded in 1910, when, with the co-operation of the Aberdeen Society of Architects, a scheme was evolved which enabled students of architecture to attend the day classes of the School for the first two years of their training. This is followed by three years' work in an architects' office, during which time evening classes must be taken at the School. The School is recognised by the Royal Institute of British Architects, and exemption from the R.I.B.A. Intermediate Examination is given to students who have obtained the certificate of the School. The Scottish Board of Education, on the recommendation of an external assessor, awards the Diploma of the School to students whose work reaches the necessary standard. The post-diploma course is provided for diploma students who have completed their office training, and they then become eligible for a Byrne Scholarship, value £60, and the Travelling Scholarship, value £120.

The School has the advantage of the classes of the School of Arts and Crafts and the School of Engineering of the Technical College. The Assessor for the past session was Mr. Paul Waterhouse, who awarded diplomas to six students, Messrs. J. Addison, H. Reid, J. C. Mackenzie, J. E. Rhind, S. Low and A. S. Reid, all of whom had been on war service. Three students of the School who were eligible sat for and passed the recent special Final Examination of the R.I.B.A. The Head of the Architectural Department is Mr. T. Harold Hughes.

This week we illustrate some students' designs submitted for a school of architecture; other students' work of this School will appear in a subsequent issue.

Proposed Marylebone Memorial.

The Mayor of St. Marylebone has asked the householders of Cavendish-square to open the enclosure to the public, and to erect in the centre a memorial to the inhabitants of the borough killed in the war.



Margate Housing Scheme: Lay-out.
MR. W. R. H. GARDNER, Architect. (*See* p. 492.)

COMPETITION NEWS.

Bradford-on-Avon (Wilts.).

For the War Memorial Committee.—Design for a war memorial. Premium 25 guineas. Sending-in day, May 8. (See our issue for March 5.)

Peterborough.

For the War Memorial Committee.—Designs for an infirmary. (See our issue for April 9.)

Willesden.

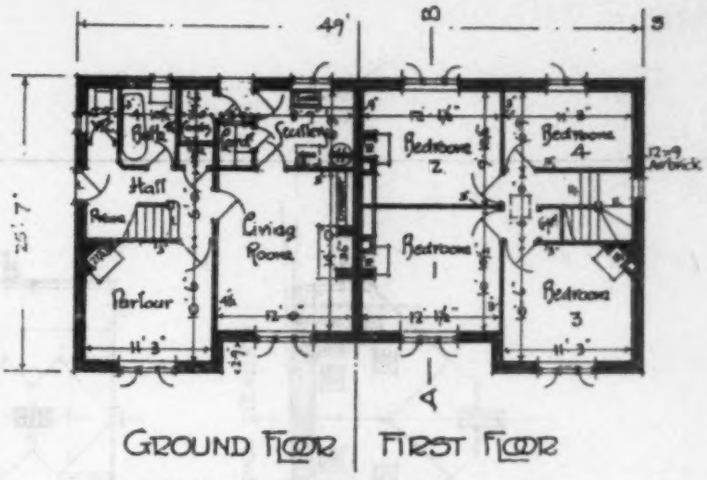
For the Willesden Hospital Building Committee.—Designs for a new hospital. Names to be submitted by April 24. (See our advertisement pages to-day.)

Gatley.

Designs for a war memorial clock tower and clock. (See our advertisement pages to-day).

Housing Progress at Weston-super-Mare.

The Weston-super-Mare Master Builders' Federation has agreed to erect 100 houses during the first year at the following prices, such prices being based on skilled labour at 1s. 8d. per hour maximum:—Parlour type in pairs, at £910 per house; parlour type in blocks of four, at £890 per house; non-parlour type in blocks of three, at £820 per house. The Town Council has decided to accept these offers and to enter into separate contracts with the builders for the erection of the houses. The Borough Surveyor has been instructed to enter into negotiations with the Tourba Construction Co., Ltd., with regard to an offer of that firm to construct "A" type houses in steel and concrete, at a cost of £1,700 per pair.



Margate Housing Scheme: Type "B 4" Cottages.

MEETINGS.

Monday, *April* 26.

H.M. Office of Works Art Club.—Professor Selwyn Image, M.A., on "John Evelyn." At King Charles-street, S.W. 6 p.m.

Tuesday, *April* 27.

Society for the Promotion of Roman Studies.—Mr. A. O. Curle on "The Treasure of Traprain." At the Society of Antiquaries, Burlington House, Piccadilly, W.1 4.30 p.m.

Wednesday, *April* 28.

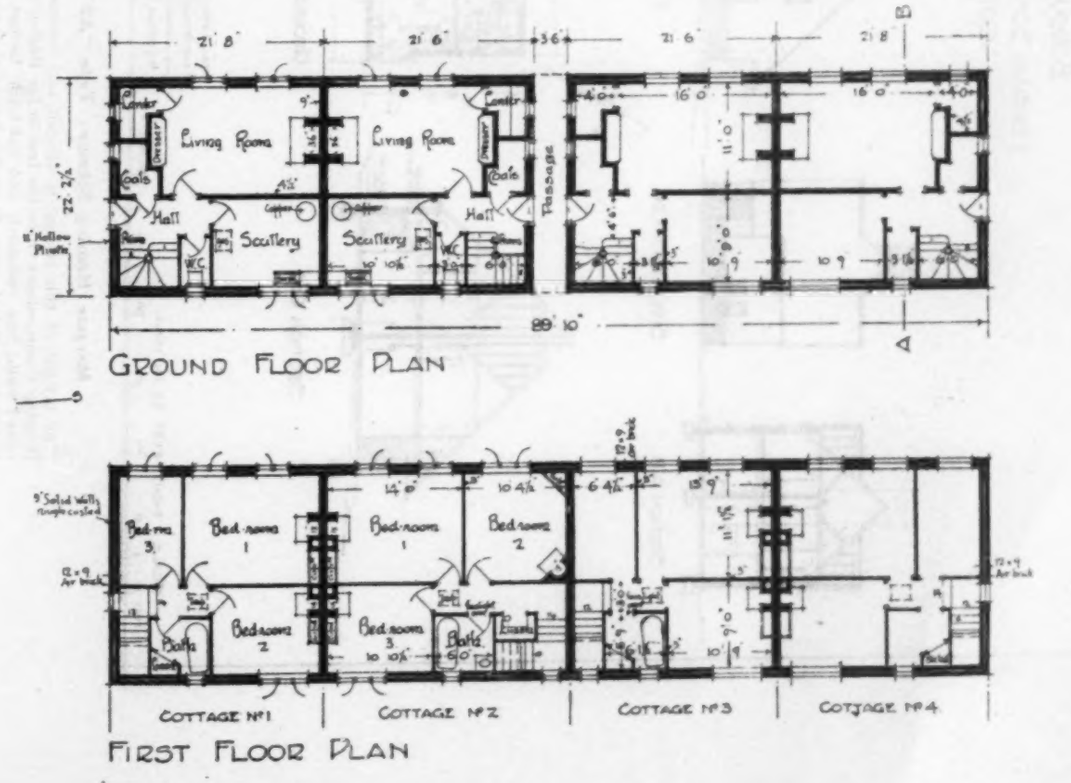
Royal Society of Arts.—Brig.-Gen. C. H. Sherrill, LL.D., on "Ancient Stained Glass." At John-street, W.C.2. 4.30 p.m.

Thursday, *April* 29.

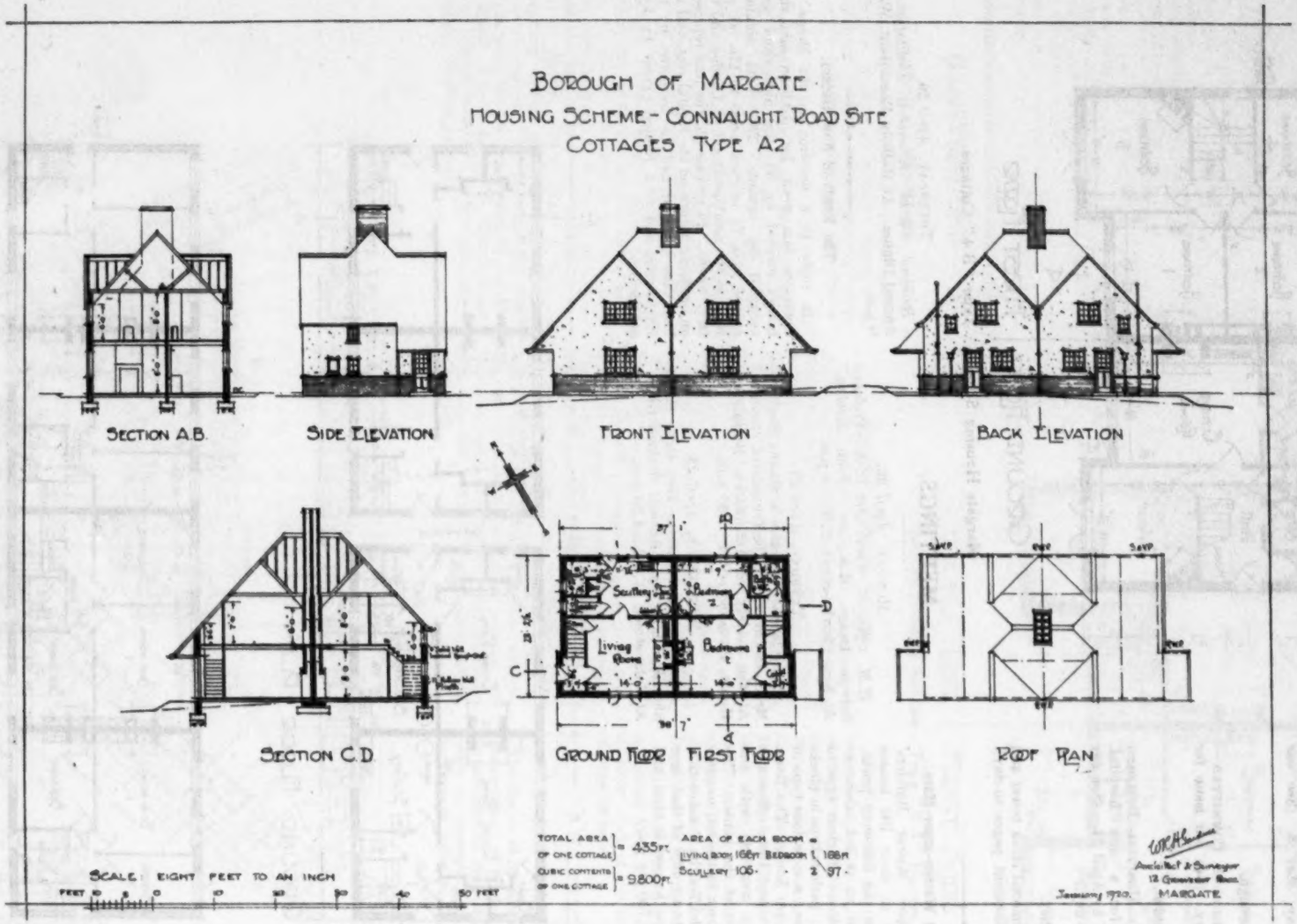
Builders' Clerks' Benevolent Institution.—Annual Dinner. At Holborn Restaurant, W.C. 6 p.m.

The Rents of New Houses.

In reply to a question in the House of Commons last week, Dr. Addison said that houses erected by 30 local authorities were occupied by tenants. The rents obtained ranged from 7s. in rural areas to 17s. 6d. per week in the neighbourhood of London and the large towns. In no case did the rent represent an economic return on the capital cost, and the loss thus incurred had to be borne by the Exchequer, and to a limited extent by local authorities.



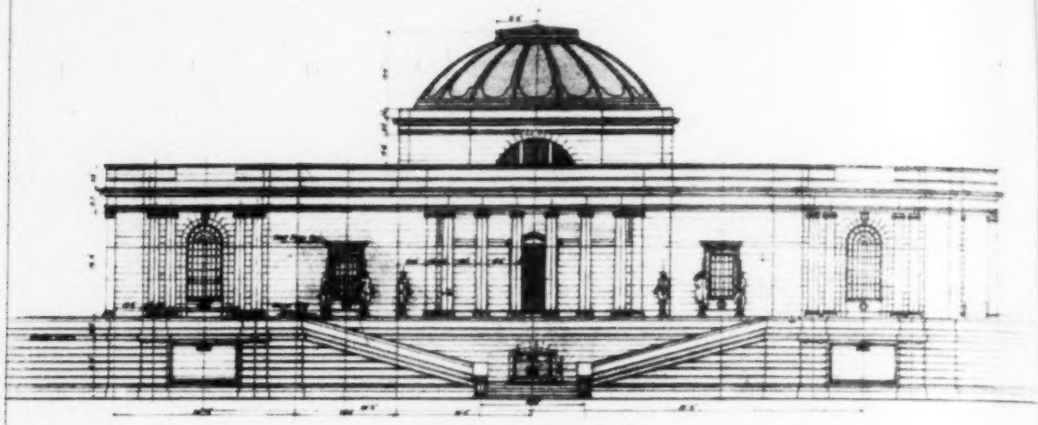
Margate Housing Scheme: Type "A 1" Cottages. Mr. W. R. H. Gardner, Architect. (*See* page 492.


BOROUGH OF MARGATE
HOUSING SCHEME - CONNAUGHT ROAD SITE
COTTAGES TYPE A2
SECTION A.B.
SIDE ELEVATION
FRONT ELEVATION
BACK ELEVATION
SECTION C.D
GROUND FLOOR
FIRST FLOOR
ROOF PLAN
TOTAL AREA OF ONE COTTAGE = 435FT.
CUBIC CONTENTS OF ONE COTTAGE = 9800FT.
AREA OF EACH ROOM =
LIVING ROOM 166FT. BEDROOM 1 166FT
SCULLERY 105 · · 2 97 ·
SCALE: EIGHT FEET TO AN INCH
FEET 10 8 0 10 20 30 40 50 FEET
JANUARY 1920.
MARGATE

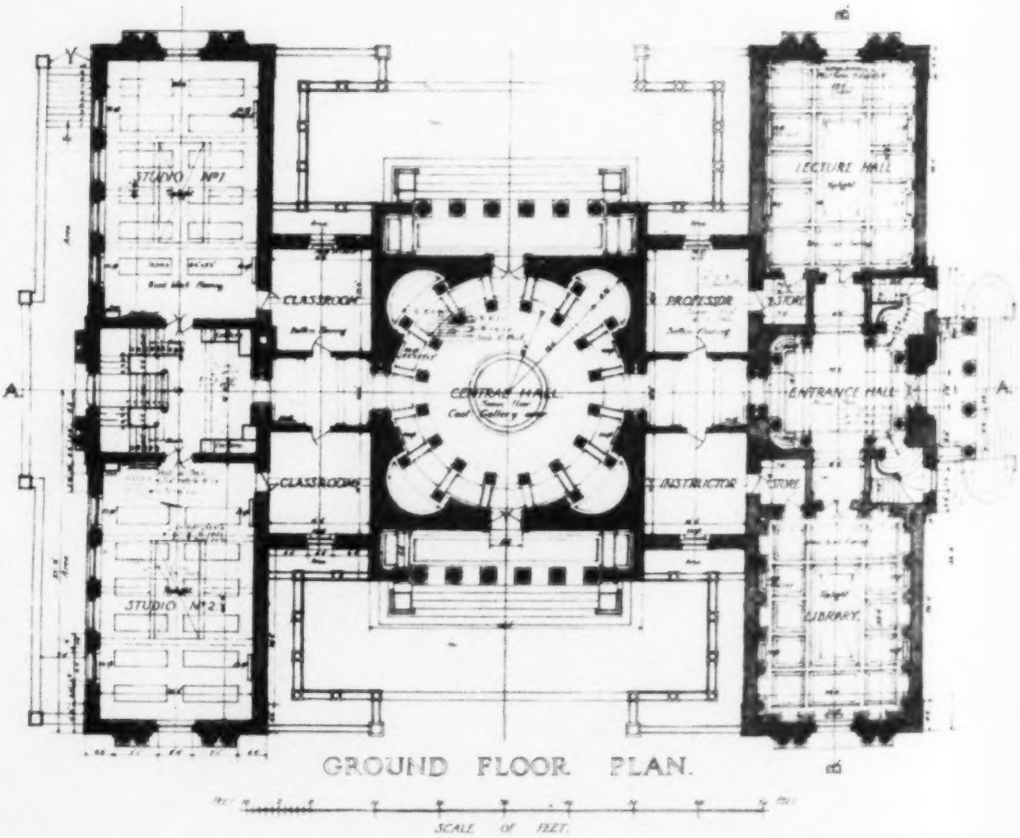
Margate Housing Scheme: Type "A2" Cottages. MR. W. R. H. GARDNER, Architect.

[The lay-out of this scheme is difficult and interesting, and the houses, we understand, are considered by the Housing Commissioner to be the best in his Region (S.E.). In spite of their larger floor areas, tiled roofs, rough-casted walls, iron casements and red-brick facings, they compare very favourably in cost with a Ministry of Health type with slated roofs, double-hung sashes and brick facings, which was included in the scheme for purposes of comparison. The tenders have been approved by the Ministry subject to the provision of gas geysers in lieu of hot-water circulation, which effects a saving of about £25 per house.]

DESIGN FOR A SCHOOL OF ARCHITECTURE.



WEST ELEVATION.

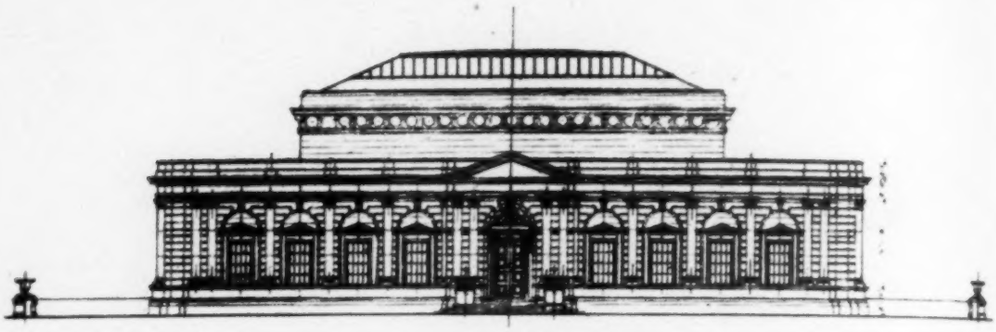


GROUND FLOOR PLAN.

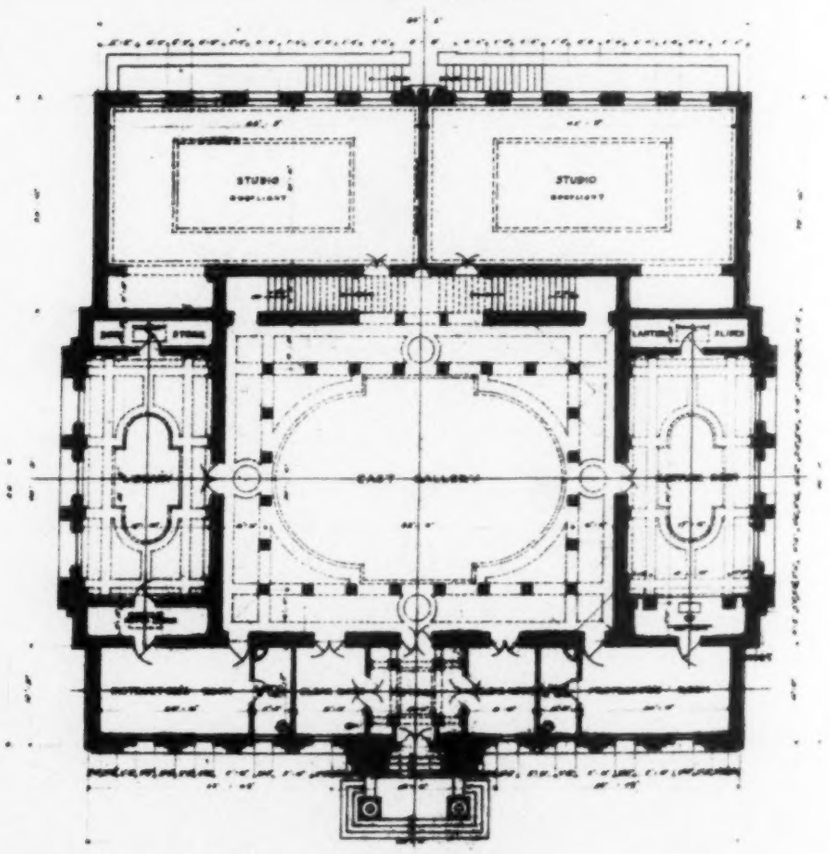
ABERDEEN SCHOOL OF ARCHITECTURE.

DESIGN FOR A SCHOOL OF ARCHITECTURE. BY MR. J. C. MCKENZIE (DIPLOMA COURSE).

·DESIGN·FOR·A SCHOOL·OF·ARCHITECTURE·



FRONT ELEVATION



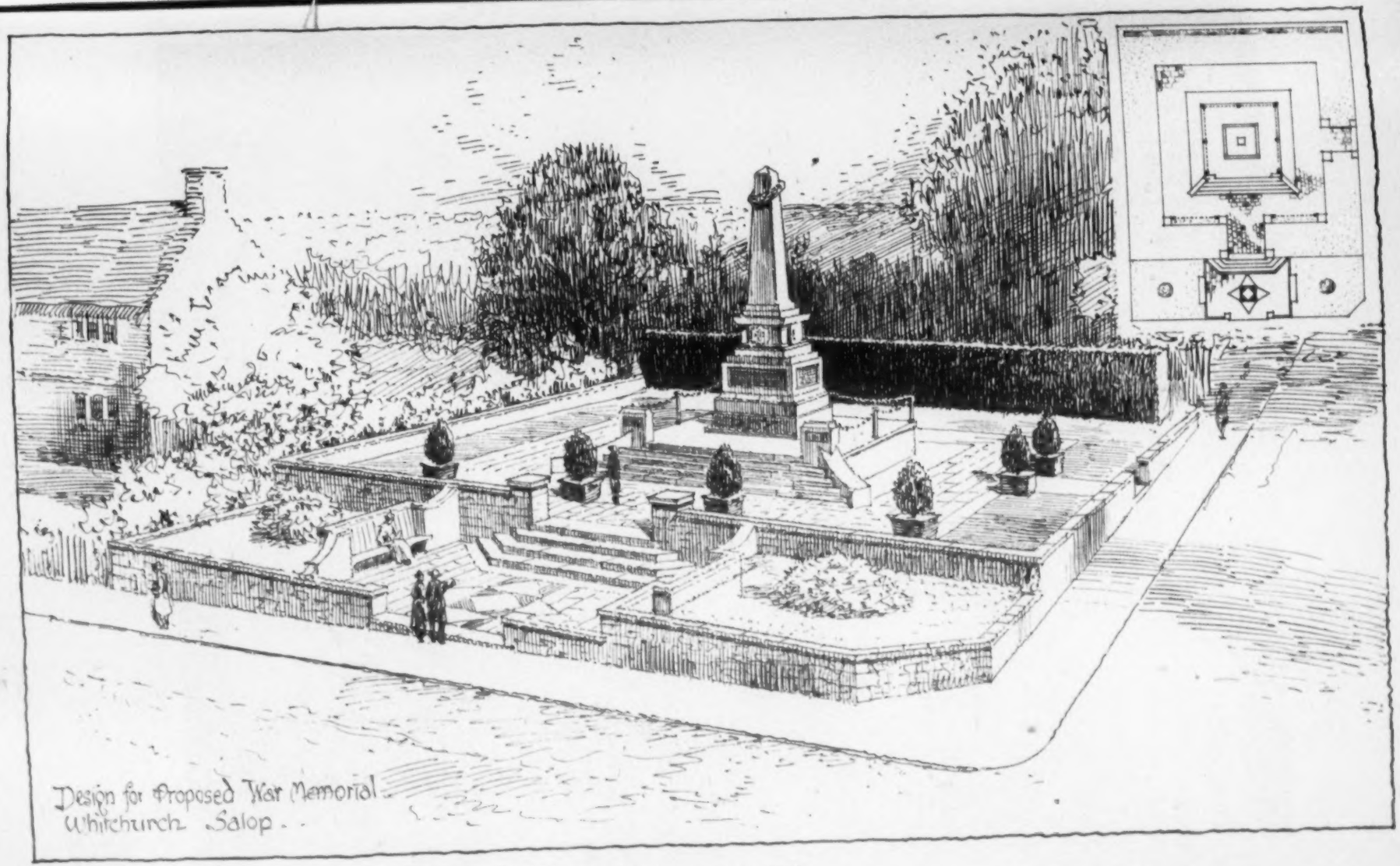
GROUND PLAN

ABERDEEN SCHOOL OF ARCHITECTURE.

DESIGN FOR A SCHOOL OF ARCHITECTURE. By Mr. J. E. Rhind (Diploma Course).

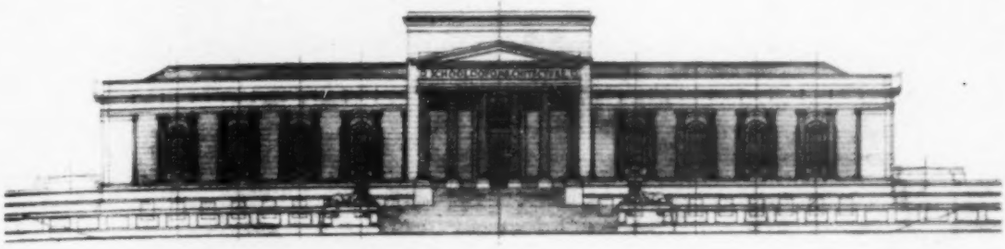
MEMORIAL SCREEN IN BAR, PARISH CHURCH, RICKMANSWORTH

MEMORIAL SCREEN IN OAK: PARISH CHURCH, RICKMANSWORTH.

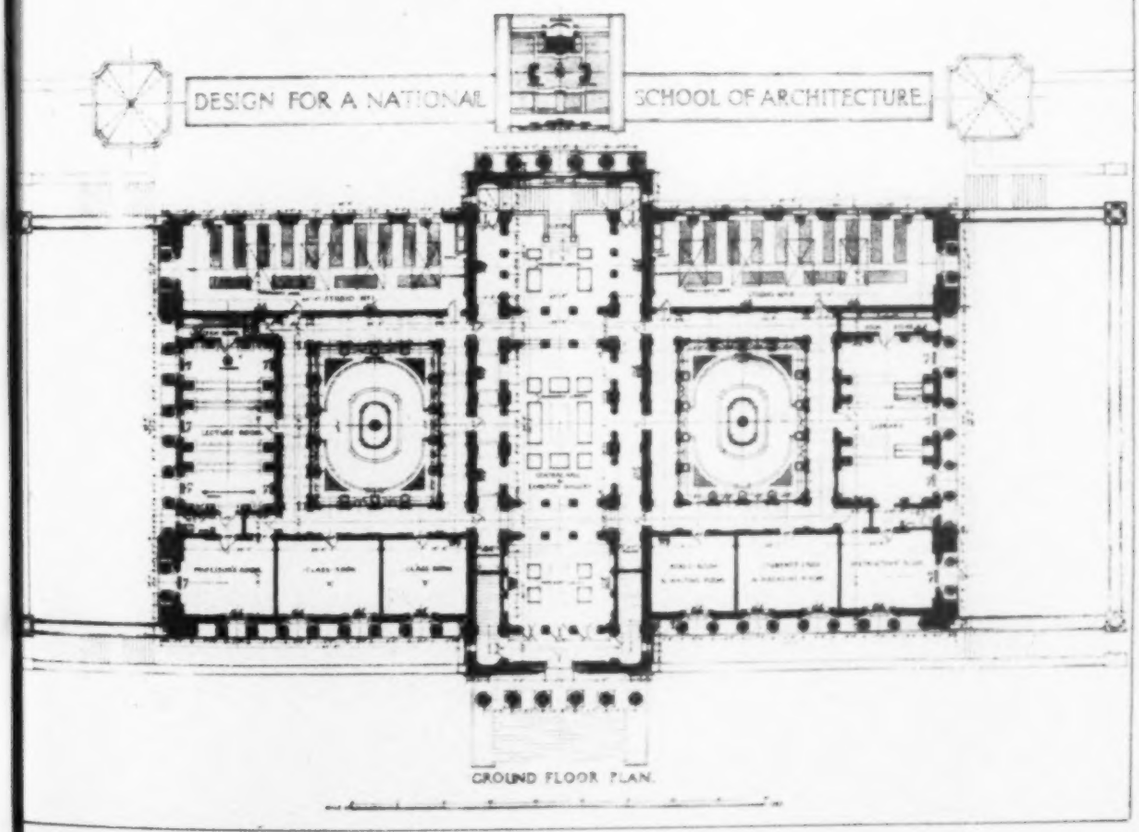


MR. F. HOWARTH, ARCHITECT.

DESIGN FOR A NATIONAL SCHOOL OF ARCHITECTURE.



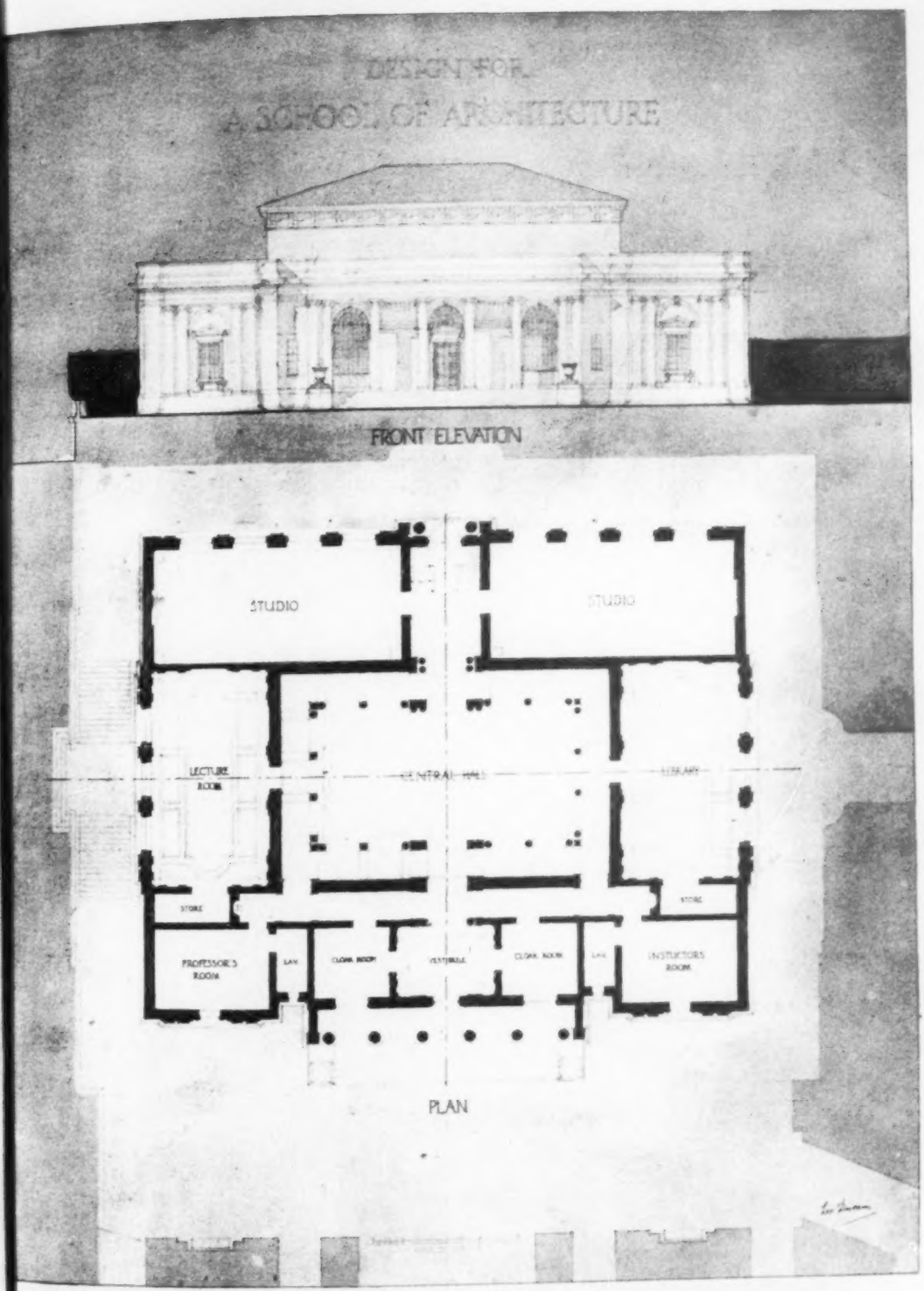
SOUTH ELEVATION.



GROUND FLOOR PLAN.

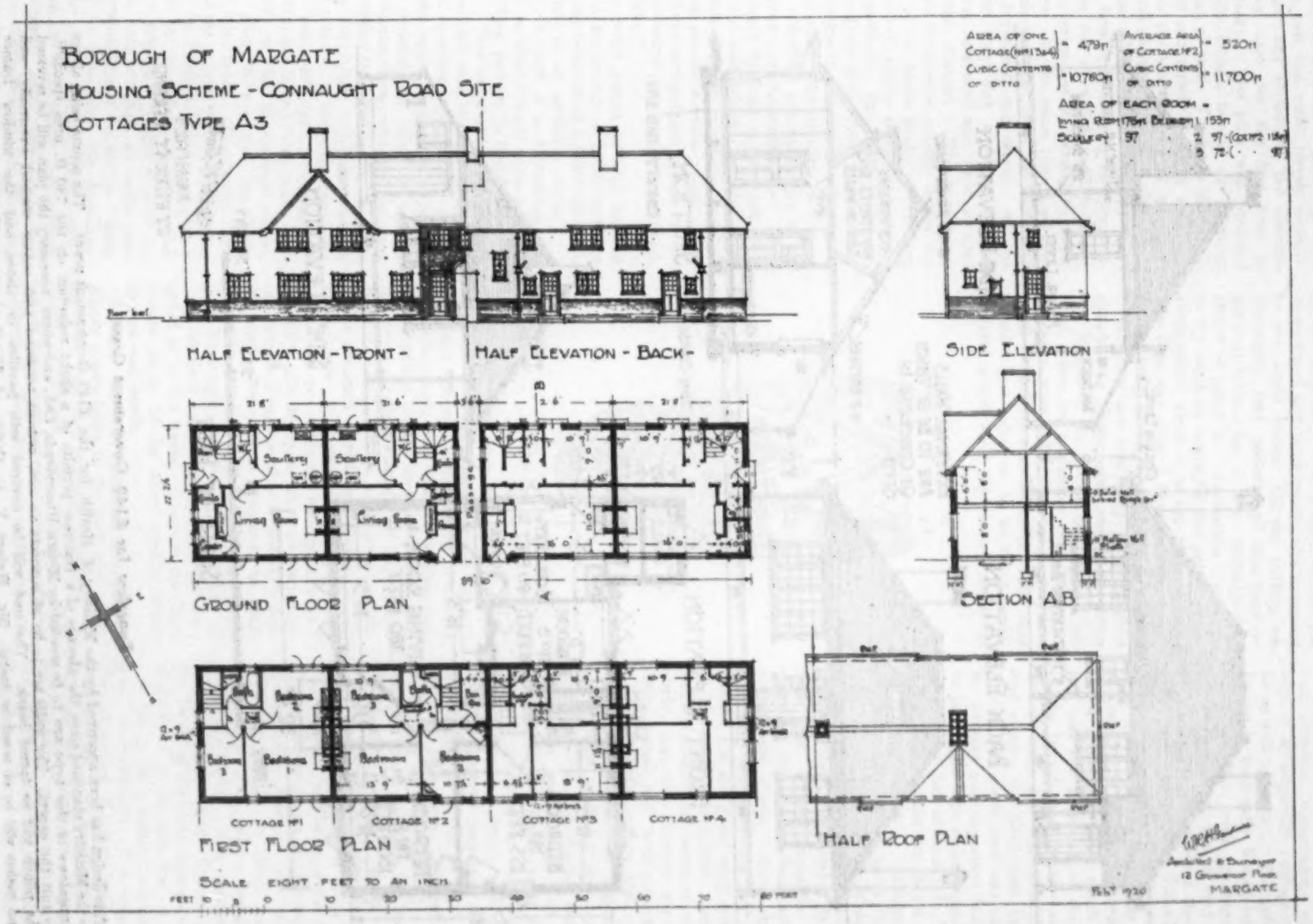
ABERDEEN SCHOOL OF ARCHITECTURE.

DESIGN FOR A SCHOOL OF ARCHITECTURE. By Mr. J. Addison (Diploma Course).

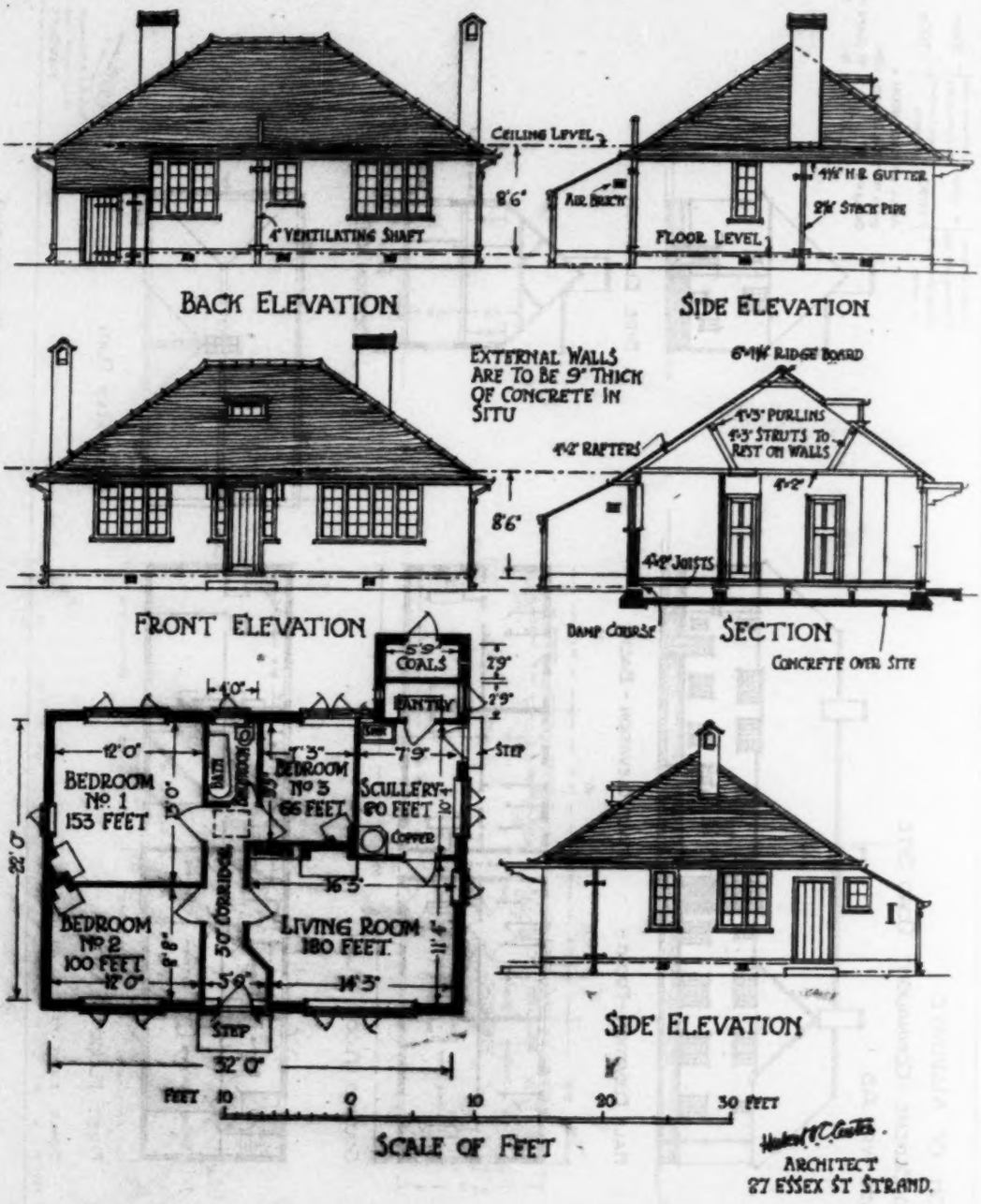


ABERDEEN SCHOOL OF ARCHITECTURE.

DESIGN FOR A SCHOOL OF ARCHITECTURE. BY MR. LEO. DURNIN (2ND YEAR).


BOROUGH OF MARGATE
HOUSING SCHEME - CONNAUGHT ROAD SITE
COTTAGES TYPE A3
AREA OF ONE COTTAGE (No 1 Type) = 479ft
CUBIC CONTENTS OF DITTO = 10780ft
AVERAGE AREA OF COTTAGE No 2 = 520ft
CUBIC CONTENTS OF DITTO = 11700ft
AREA OF EACH ROOM =
HALF ELEVATION - FRONT -
HALF ELEVATION - BACK -
SIDE ELEVATION
GROUND FLOOR PLAN
SECTION A.B
FIRST FLOOR PLAN
HALF ROOF PLAN
COTTAGE No 1
COTTAGE No 2
COTTAGE No 3
COTTAGE No 4
SCALE EIGHT FEET TO AN INCH
FEET 10 5 0 10 20 30 40 50 60 70 80 FEET
Feb 1920
MARGATE

Margate Housing Scheme: Type "A3" Cottages. MR. W. R. H. GARDNER, Architect. (*See* page 492.)



Bungalow for £140 Government Grant.

[This design has been approved by the Ministry of Health for the £140 Government grant. The rooms being all up to the Ministry standard sizes, the absence of a staircase permits of a slight reduction on the 780 ft. area specified. Bungalows of this type are to be erected by Messrs. Homesteads, Ltd., and where necessary the plan will be reversed to suit the aspect. The walls are to be of concrete *in situ*, cement rendered and colour washed externally, and the plinth will be tarred black. The roof will be covered with pantiles or slates, and the window frames and sashes will be of wood or metal. Mr. Hubert V. C. Curtis, of 27, Essex-street, W.C., is the architect.]

GREEK BUILDING ORIGINS.*

This pleasant, well-illustrated volume is an excellent introduction to this large subject. The best and most recent authorities are used and several of the illustrations appear here for the first time in English books. The plan and restored order of the archaic temple at Thermon are examples of this. The basis in Ægean art is fully and clearly brought out. In this section the Cretan palaces and Mycenæan tomb chambers are well described. Of the latter we are told "they appear to have been formed by making an open cutting in the side of a hill until it finally entered the ground at an artificially made vertical face. At the same time a perpendicular shaft was sunk from the surface to meet the horizontal excavation. At the point where they met a large domical chamber was excavated and lined by concentric courses of stone." The importance of tiling and terra-cotta casings in the development of the Doric mode of building, and questions of origins and sources generally are considered. In regard to the relation of the Doric to the Ionic we are told: "The transition from wood to stone must have taken place concurrently in Greece and Ionia, and there are signs that in regard to some architectural forms Ionia must have taken the lead and reacted upon the art of the motherland. . . The origin and evolution of Doric is chiefly found in Greece itself and its western colonies; the sources of Ionic architecture appear to be, so far as decorative features are concerned, mainly Asiatic."

I find so many points of real interest raised that I am drawn on to discuss one or two of them—discuss as a fellow student, not pronounce as an arbitrary critic.

1. On p. 42 part of a Mycenæan red marble (not porphyry) band carved into a panel and block pattern is illustrated and described. "This ornament is often compared or confused with the triglyphs of the Doric frieze, to which it has a very distant and accidental resemblance. The triglyph is almost certainly a relic of ancient timber-roof construction, whereas the ornament in question is a translation in stone of a painted decoration which is found in frescoes and pottery." True, the block and panel band was made into "ornament" first in pottery, but it had been taken over into masonry, as the illustration shows, long before what we now call the Doric frieze came into being. This stone form does seem to me to have at least confirmed the design of the Doric frieze and suggested its treatment in masonry. See on this Durm's much amplified edition of 1910, an indispensable book of which we badly need an English translation if we are to "keep up" with these questions. Mr. Bell himself, speaking of the timber stage, says: "the ends of the cross-beams ornamented like the columns with vertical grooves which became conventionalised in the form of Doric triglyphs" (p. 112). "These triglyphs appear in the earliest representations of Doric architecture and are presumably inherited from Mycenæan buildings in which they would actually represent the ends of beams decorated, like the columns, with vertical incisions" (p. 78). I do not think this likely, rather I suppose that the vertical markings of the triglyphs first appeared in pottery, were taken over into the stone panel and block bands, and so passed to the Doric frieze. On the pottery we frequently find patterns of this type:— IIII O IIII O IIII O IIII. The primacy and power of paint in "decoration" suggests to my mind an origin for the *guttæ* of the Doric frieze which is to me more satisfactory than any other I have seen proposed. In the early vases treated with band patterns there are frequently drop patterns attached to these bands and these drops are frequently in groups IIII IIII IIII IIII Now, when we remember that these appendages were called "drops," and also recall the avidity with which the later vase painters put them on to anything architectural which they represented, Ionic as

Fig. 1.

well as Doric, we may be prepared to consider this simple alternative to all the artificial and elaborate arrangements of wooden pins which have been held to be the origin of the *guttæ* on the architrave. Mr. Bell has some excellent remarks on the elaboration of some of these schemes of origin. "The assumed complete evolution of the Doric order in timber before stone was used has no evidence to support it" (p. 122). To be quite concrete and commit myself, I suppose that in the early days it would have been a custom to paint houses in stripes as was done in Ægean art (see illustration on p. 32), and that to some of these bands groups of drops were added as on the vases. Compare the illustration on p. 16 for short vertical brush strokes and bands.

2. On p. 54 it is remarked in regard to Ægean graves hewn in the rock with slanting sides, that they imitated internally "a ridged or hipped roof, suggesting that gabled roofs were already in use for smaller buildings." This does not really seem to follow any more than that in Egypt pyramid passages of similar form should also imply gabled buildings. The suggestion was originally thrown out by Tsoundas, but Dorpfeld, commenting on the point, says in an important passage which it will be as well to quote: "The gabled roof was known in very early times; but as long as there were no brick or stone tiles these gables must have had a very steep pitch, or the thatch that covered them would not have shed water. The flat clay roof was more secure; that it was usual we know from literature and from the temple and fountain-house on the François vase. The Greek gable roof, as we see it on the temple, was the invention of the Corinthians in the invention of terra-cotta roof tiles. Not till these tiles were available could the roof receive the pitch that became usual. At first this gable roof was employed only for temples and important buildings. But do not tombs with ceilings gable-wise make against the flat house-roof? The rock in which these tombs are hewn is so brittle as to put horizontal ceilings out of the question. Nor can I agree in assuming a gable roof for the building with the columns—possibly a temple—in the sixth city at Hissarlik [Troy]. It is error to hold that central supports were more necessary for a gable than for a flat roof: the opposite is true" (Intro. to Tsoundas). On this I will only add the remark that Corinth was the great early pottery centre. In the early Corinthian vases we often find the drops from bands of which I spoke above, and this feature may here have easily passed into architectural tile work.

Fig. 2.

3. Frequently in art history there has not been one and only origin, but many causes have coalesced to form concurrent origins. Thus, in Ægean and Ionic art, the rosette was a flower, but it was also the end of a round pole (*see* p. 82 and p. 52). Again, a circle is the most elementary of all forms, and a simple and common pattern for pottery painting. The illustration on p. 52, showing a row of discs which imitated pole ends, is probably shown wrong side up. In tomb II at Mycenæ such a row of discs was the bottom member of the "cornice." In these pole ends we find the origin of dentils as remarked on p. 132. The flower used as rosettes was, I think, the lotus, without exception. Those illustrated on p. 16 are spoken of as aster-like flowers, but the T-shaped stamens, similar to those which appear issuing from lilies, shown plainly in profile, settle the point. The border of deeper colour to these rosette flowers seems to be the origin of doubling (compare the second illustration, p. 16, and that on p. 42).

4. On p. 28 a small "modillion-like object" is illustrated. "A brass matrix in the Ashmolean Museum implies that they were moulded for use as applied ornament, such as ears for vases. They are chiefly interesting as giving a primitive form of the modillion which is characteristic of the Corinthian order, and which occurs exceptionally in the north door of the Erechtheum." These must, I think, have been intended, as suggested, for the formation of metal ears for vases: the section should be compared with the handles of a beautiful and well-known Mycenæan alabaster vase. It is interesting to note that in the accounts for building the Erechtheum "features" of this form there used were called "ears." Such ears were Ionic. They appear in one of the sixth century

* Hellenic Architecture, its Genesis and Growth. By Edward Bell, M.A., F.S.A. London: G. Bell & Son. Price 7s. 6d. net.

Treasuries at Delphi. I hope to return to the question of their origin in one of my regular Notes.

5. On p. 88 Doric capitals are illustrated which had ornamental bands in the place

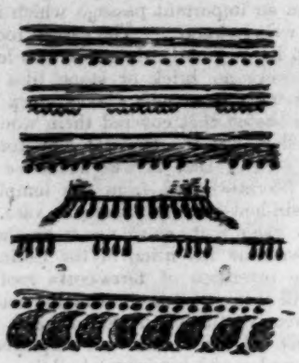


Fig. 3.

of the ordinary rings of fillets—"the corolla of leaves was a traditional feature." Noack has published a collection of many Doric profiles (Ath. Mitth. 1896). On comparing these it seems certain that the plain series of fillets was a rather dried-up version of what Mr. Bell pleasantly calls "the corolla of leaves." Again we reach Nature as the great primal source, and whoever in the future will re-adapt the Doric type will have to think of a bowl-shaped mass with a collar of leafage. The series of fillets probably came in with turning the smaller —possibly wooden—capitals in a lathe, they are the kind of forms which seem to come naturally in the method of turning. Penrose thought that the Parthenon capitals were finished by rotation.

6. On p. 133 Choisy's idea that the four sets of lions' heads and paws, projecting in such a boldly awkward way from the "roofs" of Lycian tombs, represent a covering of hide, is mentioned. Comparison with innumerable examples shows that they were magic guardians looking towards the four quarters. I have before shown that four similar lions' heads at the Parthenon fall in with this same tradition. It may be mentioned here that one of the metopes of the archaic temple at Thermon, mentioned above, was filled by a monster grinning Gorgon's head, a thing which exercised a similar protective function.

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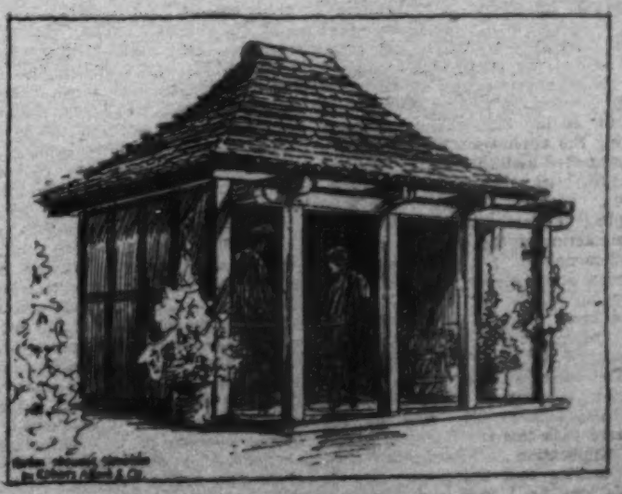

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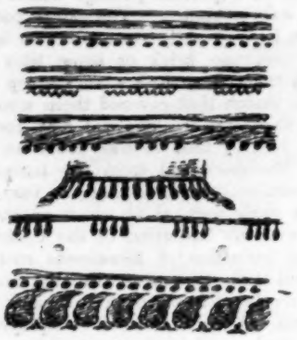

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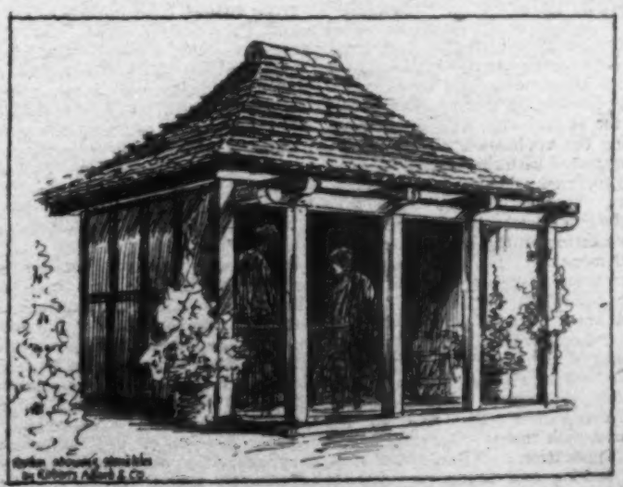
ROOFING MATERIALS.

The Ruberoid Co., Ltd. (81–83, Knightrider-street, E.C. 4) are showing a large assortment of their specialities for roofing, flooring, &c. "Ruberoid" roofing has been employed for the roofing of all kinds of buildings, including the largest public buildings, factory, dock, engineering, railway and commercial buildings of all types. In 1905 the firm introduced a method of colouring "Ruberoid," which is now supplied in two attractive colours, red and green. "Ruberoid" is proof against weather, water, acids and alkalies; it is unaffected by heat or cold, and will not melt or run. Models show the method of application to roofs of various types, and provide examples of flashings, gutters, &c. "Ruberoid Dampcourse" for foundations fulfils all the requirements of a permanent dampcourse. "Ruberoid" flooring is employed for covering wood or concrete floors of laboratories, accumulator rooms, office buildings, workshops, &c., where an acid-proof, water-proof and damp-proof flooring of durable character is required. The firm's sarking felt is for use under slates and tiles on permanent type buildings and on buildings in exposed positions. It is rot-proof, damp-proof and vermin-proof, and permanently retains its qualities. It is a non-conductor, and simplifies the heating of large shops, halls and buildings, preventing the escape of heat through the open joints of slates, tiles and iron. "Pluvex" roofing felt is a self-finished bituminous roofing designed specially for the covering of small buildings, and does not require tarring, painting or coating. Samples of insulating papers and preservative paints are also shown.

Bitumen roofings, dampcourses, builders' felts, plain tarred and tarred and sanded felts, &c. are shown by Messrs. National Roofings, Ltd. (150, Southampton-row, W.C. 1), and the roof and walls of a small building are carried out in these materials. A special slate-coated roofing in roll, shingle, and strip-shingle form is shown. Apart from its decorative and pleasing effect, this material is very durable in all climates, can be used on the sides of buildings



Messrs. Roberts, Adlard & Co.'s Stand.

as well as the roofs, and sparks or burning embers from chimneys, locomotives, &c., will not set fire to it. The colouring in the material is constant, and it is not affected by acids or alkalis. Its lightness permits of great economy in the roof structure. The various colours in which the material is made are effectively displayed on the stand.

A garden house built of oak and panelled with grey asbestos with crazy stone paving in front is used by Messrs. Roberts, Adlard & Co. (47, Queen Elizabeth-street, S.E. 1) to display the roofing specialities manufactured by the firm. The roof of the stand is covered with "Racephas" stone roofing in graduated courses. Various roofing materials, such as random slating in various shades of grey, pantiling, plain tiling, bonnet hip tiling, swept valley tiling, and asbestos roofing, are exhibited by first-class samples.

The exhibit of the British Roofing Co. (150, Southampton-row, W.C. 1) effectively displays the uses of the well-known "Alligator" asbestic slates and wall and ceiling sheets. Various methods of laying the asbestos slates can be adopted, but the one recommended for economy combined with efficiency is the diagonal style with "C" pattern slates 16 in. by 16 in., allowing for an overlap of 3 in., but in particularly exposed or other abnormal positions they can be supplied for either 3½ in. or 4 in. overlap. The tiles are shown in a similar pattern 12 in. by 12 in., 18 in. by 18 in., and 24 in. by 24 in. Special size tiles are also shown for laying as ordinary slating. The tiles are made in three colours, grey, blue and red, and can be nailed in the usual way on wooden battens or boards, or can be fixed direct to steel angle irons. Asbestic wall and ceiling sheets are shown in standard sizes, 8 ft. by 4 ft., 6 ft. by 3 ft., 6 ft. by 4 ft., and 4 ft. by 4 ft.; in thicknesses from 5-32 in. to 1 in. and various systems of using these for walls, partitions, &c., are demonstrated, also the decorative effects that can be obtained by their use as panelling, &c. A small roof of asbestic corrugated sheets, specially made for roofing for factory construction, being acid and chemical proof, fire and rot-proof, is also on view.

The merits of their specialities for roofing and dampcourses are displayed by Messrs. G. M. Callender & Co., Ltd. (25, Victoria-street, S.W.) by means of samples and models. "Callendrite" waterproofing medium for open and covered service and storage reservoir, filter beds, swimming baths, lakes, ponds, etc., is shown on a model reservoir with sloping sides lined throughout with "Callendrite" sheeting, which is under a practical water test for the duration of the Exhibition. In the centre of the reservoir is a column of loose, porous bricks under the top course of which, just above water level, is inserted a piece of "Callendrite" dampcourse. The bricks above the dampcourse are quite dry. "Callendrite" is supplied in rolls 24 ft. long, cut to suit the usual wall widths up to 36 ins. "Ledkore" dampcourse, composed of a core of sheet lead with a special bitumen covering on both sides, contains no coal tar or pitch, and is a good dampcourse for all climates, and all purposes. This is made in rolls 24 ft. long, in all wall widths up to 36 in. The exhibit includes a wall showing the application of "Protex"; one portion is treated with this material applied directly on to the brick and afterwards rendered with plaster; another portion shows the material applied to plaster and papered over. The water jets acting on the back of the wall practically demonstrate the effectiveness of "Protex" as a damp resister; no lathing is used to key the plaster. "Ritusol" paint, for iron and steel work of all descriptions; "Veribest" ready roofing, a self-finished roofing material of high quality, prepared from Trinidad Lake bitumen and supplied in rolls of 1, 2, and 3-ply, complete with nails, and cement are also shown. The roof of the office is covered with this roofing, showing the method of application; "Rooferite" felt, for roofing, sarking and lining purposes, in rolls 15 yards long by 1 yard wide; and an insulating damp-proof paper for use in cold storage and building, are also shown. The application of "Bitubond" to cavity walls is shown by a model. Poured hot into cavities formed by two brick or stone walls "Bitubond" fills every interstice in the inner wall faces rendering the wall impervious, non-conducting, sound and temperature proof. It also adds to the strength of walls to which it is applied.

HEATING AND LIGHTING.

An exhibit of interest is that of the Richmond Gas Stove Meter Co., Ltd., of Warrington and Queen Victoria-street, London, which puts forward the claims of gas for cooking, heating and hot water supply by a display of modern equipment suitable for housing schemes. In the "Bungalow" cooker, the oven is raised on a white enamel-topped stand, which enables food to be placed in the oven and inspected from time

The "Bungalow" Cooker.
RICHMOND GAS STOVE METER CO., LTD.

to time with a minimum of stooping, and also permits of the floor beneath the cooker being kept clean. As a further aid to cleanliness, all shelves, burners, &c., are removable, and the white enamel wall-plate prevents the wall from becoming discoloured by steam or splashes. The oven is packed and enamelled throughout, and the exterior sides and back are finished in dark green enamel. All burners are fitted with gas and air adjusters. The "Bungalow" is the type of cooker selected by the Department of Building Material Supplies, and mentioned in the schedule issued by them. The plate rack is of patent design, all plates and dishes being held in a vertical position, so that they are warmed whilst cooking is in progress. Five sizes of the "Bungalow" cooker are shown, suitable for families of from three to twelve persons. A gas-heated, hot water circulator (the "Ironclad") is shown fitted and in operation. This heater provides a plentiful supply of hot water to every part of the house, including the bath, and is constructed throughout of cast iron. All interior surfaces are vertical to minimise the formation of deposit. These two factors keep the maintenance costs at a very low level. Gas is automatically controlled by a thermostat, which lowers the gas when water is hot, and raises it again when water is drawn off. This circulator can be connected to existing hot-water cisterns or provided complete with a cylinder fitted above and connected to it. The hot-water cylinder in the complete set is provided with a cut-out valve which temporarily reduces its capacity when only small quantities of hot water are required. Another type of hot-water circulator (the "Equator") is also shown. This apparatus serves a similar purpose to that of the "Ironclad," but consists of a boiler and cylinder combined. The "Lyn" sink boiler, also shown, provides an ample supply of hot water for all domestic requirements (except bathing and clothes washing). This small heater is hung upon the wall and connected to adjacent gas and water pipes, and both gas and cold water supply are automatically controlled. Numerous types of geysers for bathroom use, and a selection of the well-known "Period" series of gas fires are shown. The exhibit includes numerous other examples of modern gas equipment, many of which are fitted and in operation.

The "Ventiheta," shown by the General Trading and Manufacturers, Ltd. (109, Bermondsey-street, S.E.), is a heating apparatus designed for warming rooms without the dirt and trouble attending open fires, and without the possibility of gas fumes mixing with the atmosphere. The cold air is induced into the room and enters the apparatus at the bottom, and after being warmed is expelled at the top, thus ensuring a continuous circulation of warm air. From tests carried out, it has been found that there is less contamination of the air by a "Ventiheta" than from a single gas burner.

The large assortment of gas-heated hot-water apparatus exhibited by the "Hurry" Water Heater Co. (39, Broad-street, Birmingham), are specially designed for use in small houses. These geysers and boilers are made in various sizes to suit all purposes, and are very economical in gas consumption. If required, they are made for burning oil in the same patterns.

Messrs. Cakebread, Robey & Co., Ltd. (Caroba Works, High-road, Wood Green, N.22), are showing some high class double-oven kitcheners, with hot closets, bevelled glass doors, fitted opener to oven, portable ranges with fitted opener to oven door, and removable ovens which admit of easy repairs when the oven has been burnt through. Interiors in armour bright finish, and with brass and copper canopys, all fitted with low fires, are on view, and also new and exclusive designs of wood mantel-pieces in white wood and oak, enamelled slate chimney-pieces in wood colourings, tile register mantels with bath boilers at back, mantel registers, baths, lavatory basins, sinks, pedestal closets, portable coppers, heating boilers, domestic boilers, radiators, sanitary goods and plumbers' goods and general brass foundry. Some of the chimney-pieces are of very attractive design, and are designed to suit dining-rooms, drawing-rooms, &c.

The "Interoven" stove, which is being so largely adopted for housing schemes, is shown in many patterns by the Interoven Stove Co.,

The "Interoven" Stove.

Ltd. (156, Charing Cross-road, W.C.2). This stove can be used either as a dining-room fire-grate or a kitchen range, the conversion being made by a very simple operation. The average coal consumption is 2 lbs. per hour, and it has

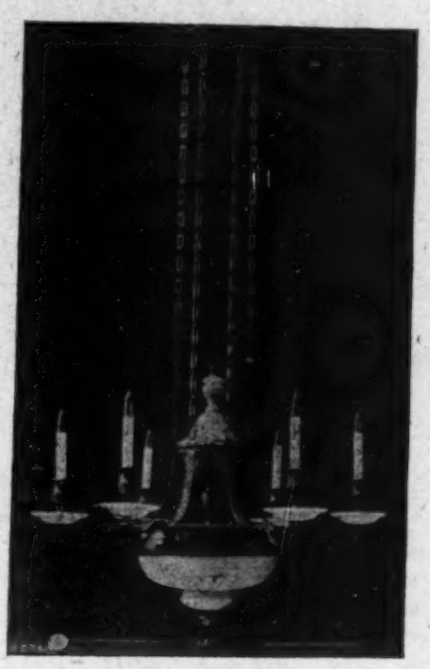
a very large cooking capacity for a range of its size. The hot-plate will accommodate 2 one-gallon and 2 three-pint saucepans; a pair of trivets adds to the width, and these can also be used with an open fire. A hot-closet is fitted under the stove; besides raising the hot-plate to a better position for cooking, this forms a second oven for food requiring top-heat, for warming plates, &c., and can be used with either a closed or open fire. The "Interoven" is easily adapted to existing fire-places, and is specially recommended for use where large houses are being converted into flats.

The "Willett" air-gas installation for providing power for lighting, heating and cooking, and specially designed for large country houses, is shown by Messrs. Mann, Egerton & Co., Ltd. (Willett Building, Sloane-square, S.W.). In this installation gas is generated from petrol in a self-contained automatic weight-driven machine, designed on simple lines, and which does not require skilled attention.

The exhibit of The Well Fire and Foundry Co., Ltd. (15, Berners-street, W.) consists of a pavilion of classic design, in which complete mantel-piece suites offer a few suggestions as to how the patent "Well" fire can be tastefully adapted to all types and periods of interior decoration. The fire itself is efficient and artistic, and is very economical in consumption of fuel. It owes its efficiency to the scientific design of the patent "well," which consists of a solid piece of fireclay in which the fire is contained, and which is provided with channels permitting air induction at the floor level. The air enters below the fire, and on its passage thereto has to pass round the fireclay "well," with the result that by the time it reaches the fire the air is superheated, and in passing through the fire ignites gases from the fuel which would otherwise escape in the form of smoke, thereby giving slow combustion and an almost smokeless fire. In addition, the company manufactures kitchen ranges, porcelain baths, sanitary goods, etc. These exhibits and the structure containing them were all designed in the company's studios.

Fireplace. By The Well Fire & Foundry Co. Ltd.

Messrs. F. & C. Osler, Ltd. (100, Oxford-street, W. 1), have on exhibition an excellent series of electric light fittings, in metal, English alabaster, and cut and crystal glass. The series



Alabaster and Old Silver Electrolier.
By Messrs. F. & C. Osler, Ltd.

ranges from small, neatly-finished fittings suitable for domestic use, to elaborate candelabra for churches, public buildings, &c.

Messrs. McDowell, Steven & Co., Ltd. (2, Upper Thames-street, E.C. 4) are making a special show of the "Cottage" combined boiler stove, specially designed for housing schemes; in addition to a large cooking oven, hot closet and hob space for boiling, this combination provides a continuous hot water supply. It is shown in operation, connected to bath, sink and two radiators. They also display their "Lion" patent range, "Combyn" coal and gas fire, as well as other cooking and heating specialities.

BUILDING CONSTRUCTION.

The Climbing-Steel Shuttering Co. (515, Queen's-road, Sheffield) are showing an interesting system of shuttering for forming monolithic concrete walls in sections. The shuttering consists of light bolstered galvanised steel plates, only one row of which is required to build a wall of any thickness and any height. The inside and outside shutters are held apart the thickness of the wall by means of wires which pass through holes pierced in the upper and lower edges of the shutters. When the concrete has been filled in and has stiffened, the lower wires are cut and the plates are turned up from the bottom—the top wires acting as hinges. The plates have a face both sides, so that immediately they are turned up and wired they are ready for the next charge of concrete; and so the plates revolve to the top of the wall. No uprights or guides are required except at the extreme corners of the building, where wood uprights are fixed plumb; from these a line is all that is required to keep the work straight and true. The plates are made in lengths, of 5 ft., 6 ft., 7 ft., 8 ft. and 9 ft. by 17 in. high and about ⅛ in. thick. If the length of plate does not exactly fill out between the uprights, a piece of sheet iron can be used to fill up the gap. The plates are very light. Door frames and windows can be built in between the shuttering or openings left.

An ingenious method of arranging doors for public buildings is exhibited by means of a model by Mr. W. F. Parsons (41, Rathbone-place, W. 1). The doors, which are designed for use in a vestibule doorway, are hung on a metal frame pivoted at top and bottom at the sides of the doorway, no hinges being used. The doors are held in the frames by pivots at the sides where they meet when closed, and fixed to the frame at the other sides by clips. When, in order to meet the requirements of the L.C.C. regulations, the doors are required to be closed flush with the outside wall, the doors and frame are folded back to the sides of the passage way, the clips which hold the outsides of the doors in the frames are released, and the doors closed by being pivoted from the inner edges. When closed, the doors are fastened with a loose vertical bolt let into the bottom, and this is released by having a loose section of flooring, which, as it is trod on, pushes up one end of a counterbalanced weight flush with the floor directly under the bolt. In order not to damage the floor when the doors are opened and closed, the loose vertical bolt is fitted with a small wheel at its lower end. This invention is simple in operation, and appears very satisfactorily to fulfil the purposes for which it is designed.

The Humphries Patent Bracket and Scaffold Syndicate, Ltd. (Osier Works, Point Pleasant, S.W. 18) are showing their useful system of scaffolding, which dispenses with the costly poles and cords used in the ordinary system. The apparatus is triangular in shape, in the form of a bracket, and is fixed to the wall by a grappler, which is inserted in any vertical joint in the brickwork. The brackets are very strong and will take any weight; in fact, the greater the weight put upon the scaffolding, the more the grappler will grip.

Samples of new asbestos-cement building boards and roofing materials, production of which is to begin in about June next, are exhibited by Mr. W. Pattison (Ditton-road, Widnes). These sheets, which are made in the usual sizes and a good assortment of colours are made and cured by a new process, by which it is claimed that faulty or strained sheets are

impossible. Pipes and decorated tiles, coated with a chemical porcelain giving an extremely hard surface, are also on view.

The Bath and Portland Stone Firms, Ltd. (Bath) are showing specimens of Portland stone for façades and Bath stone for the construction of small houses.

A new method of building concrete walls is demonstrated by Concrete Dwellings, Ltd. (5 and 6, Great Winchester-street, E.C. 2). In this system a hollow or solid wall is constructed with a portable mould. The mould is filled and tamped at one end of the wall, after which the sides are released from contact with the finished block by a simple operation and the mould drawn along on rollers in readiness for the next section. This operation is repeated until the desired length of walling is reached and the upper courses are constructed in the same manner after a period of about 24 hours has elapsed for the courses below to become sufficiently set to stand the weight of the upper courses. Hollow walls are built by inserting longitudinal liners in the mould, according to the position of which the two walls can be of unequal thickness. In order to tie hollow walls, the length of the liners is three or four inches less than that of the mould, thus forming a solid wall every three or four feet, according to the length of the mould.

Some fine examples of woodwork are shown by Messrs. Samuel Elliott & Sons (Reading), Ltd., of Reading. These include a series of period mouldings in Elizabethan, Jacobean, Wren, Georgian, Adam and French designs. The speciality of the firm is a patent revolving door, one of which occupies the centre of the stand. The door contains two compartments. Various panellings are shown, including patent interlocking rail panelling. There are also shown a panelled Cuban mahogany door, a sample of fumed and wax polished wainscot oak, parquet flooring, and similar joinery work, all of high-class finish.

Tiles of every description, including the "Somerset" patent interlocking tile, 15½ in. by 8 in., laid to 12½ in. gauge (or less, if more lap is required), are shown by the Somerset Trading Co., Ltd., of Bridgwater. There are also exhibited a large variety of ridges, finials, chimney-pots, drain pipes, copings, bricks, and flooring and oven tiles.

Messrs. Dreadnought Fireproof Doors, Ltd. (46, King William-street, E.C. 4), are showing a selection of fireproof doors specially constructed for various purposes. These doors have successfully withheld a temperature of 2,000 deg. F. for four hours. They can be ribbed or panelled to any design desired, and may be further ornamented by the addition of mouldings. The firm's "Empire" firedoors are somewhat lighter, but equally strong, and are suitable for lifts, staircases, &c. All the doors are made to hinge, swing or slide, and close automatically; they are extensively installed in art galleries, museums, theatres, mills, warehouses, country mansions, &c. "Dreadnought" cabinets are constructed in a similar manner to the doors, to offer in a minimum space a maximum capacity for the safe keeping of papers, &c.

A new form of building, the "Cat-Ar" system, is demonstrated by a model on the stand of Messrs. Cat-Ar Constructions, Ltd. (54, New Broad-street, E.C. 2). The building is on the arch principle constructed of reinforced concrete blocks reinforced with wire meshing. The walls and roof are constructed in one piece. A new type of concrete block-making machine is also shown on this stand, by which two blocks, measuring 2 ft. by 9 in. by from 2 in. to 4 in. thick, are made in one operation.

Messrs. S. & E. Collier, Ltd. (Grovelands, Reading) have a striking stand to illustrate the adaptability of their red and multi-coloured bricks. The door and window openings of the structure are carried out in intricate designs with red-brick, and the walls are of bricks with old English facings in rough texture. The roof is covered with tiles in various colours. Specimens of various kinds of roofing tiles, chimney pots, sandstone bricks, partition blocks, &c., are on view inside the stand.

Messrs. William Harbrow, Ltd. (South Bermondsey, S.E.16), are exhibiting an example of the construction and decorative treatment of timber and asbestos construction, in which this firm are specialising. The panelled ceiling and walls represent a method of treatment suitable for bungalows and similar buildings. A selection of drawings for various types of buildings are available for inspection at the exhibit, and a representative is in attendance to give any particulars and costs of building schemes to meet all requirements.

The "Metacon" system of glazing is demonstrated on the stand of the Metacon Patent Glazing Bar Co., Ltd. (124, Chancery-lane, W.C.2) by means of models of glazed roofs and windows. A galvanised fixing strip is inserted in a lead flashing which has been folded in half, and the two are inserted in a slot in the centre of the glazing bar. The glass is then placed on the outer edges of the bar and the underside of the lead flashing is coated with paint and folded on to the glass. In this way a waterproof glass roof is obtained without the use of putty.

Messrs. Fenning & Co., Ltd. (Palace Wharf, Rainville-road, Hammersmith, W.), have on view some excellent samples of marble, granite, and mosaic work. There are also marble chimney-pieces in various periods and styles, lavatory tops and stands, marble columns with carved caps and stone columns for garden pergolas, and suchlike purposes.

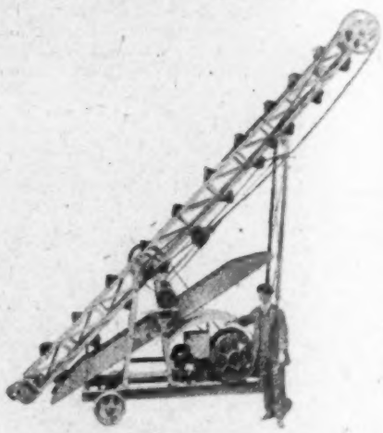
A patent window clutch of very simple design is shown by Messrs. Cliffords, Ltd. (St. Leonard-street, Peterborough). The device consists of two discs working one inside the other, and the window is secured by the turning of a small lever. The clutch, which is made with a fixed or detachable lever, can be used for either vertically or horizontally-hung windows.

The "Utod" patent door, shown by The North of England School Furnishing Co., Ltd. Darlington), consists of two thin faces of three-ply wood built on a core of wooden laths and blocks, making a very light and strong door. There are no face joints, and the plywood construction eliminates the possibility of shrinkage.

The various uses of "Beaver" boarding for interior decoration are shown by The Beaver Board Co., Ltd. (4, Southampton-row, W.C.1). "Beaver" board is a pure wood fibre wall-board, taking the place of lath, plaster, wall paper and other materials used for constructing and finishing walls, ceilings and partitions in new or remodelled buildings of every type. It is made of selected woods reduced to fibrous form and pressed into panels of three-sixteenths of an inch in thickness, in widths 36 in., 48 in.; and lengths of 8 ft., 9 ft., 10 ft., 12 ft., 14 ft., and 16 ft. The panels are nailed direct to the studding and ceiling joists, and are easily fixed to brick or concrete walls. The surface of the panels can be finished with oil or water paint, or distemper, and the joints covered with moulding strips to complete the panel effect. "Beaver" board is a non-conductor of sound, heat and cold, is unaffectd by shock or vibration, and is moisture proofed by a patented "Sealtite" process. The decorative possibilities of "Beaver" board are exhibited in a finished room, and also the method of fixing.

CONCRETE MACHINERY.

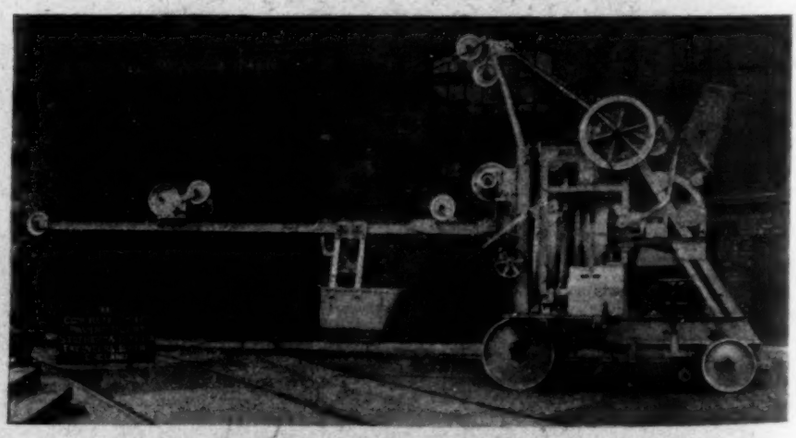
The "Winget" portable elevator is an outstanding feature of the stand of Messrs. Winget, Ltd. (24, Grosvenor-gardens, S.W. 1). This machine not only solves the problem of lifting concrete blocks during building operations, but eliminates the laborious and costly task of carrying up bricks in a hod. Also it will automatically handle and lift gravel, sand, clinker and similar material, and empty it into any wagon or truck. It will elevate 1,500 18 in. by 9 in. by 4½ in. concrete blocks, 5,000 bricks, or over 10 cubic yards of sand or gravel per hour. The



"Winget" Portable Elevator.

total weight of the elevator is 25¼ cwt.; overall width 4 ft. 6 in., and maximum elevating height 16 ft. The combined length of the two booms is 20 ft., and the height with the lowest working position 10 ft. It is driven by a 3 h.p. Lister benzol or petrol engine.

The chief exhibit of Messrs. Stothert & Pitt, Ltd. (of Bristol and London) consists of one of their standard No. 1 "Victoria" concrete mixers mounted on self-propelling truck and fitted up as a road-paving plant. The mixing drum is built on standard lines, but is mounted in such a way that it discharges endwise instead of at the side of the truck. This arrangement is made to enable the plant to be travelled backwards as the work proceeds without interrupting the laying of the concrete on the road. The special feature is the distributing boom along which a drop bottom skip is travelled. The movement is controlled by clutch gear, and can be reversed at will. Assuming that a batch o



Stothert & Pitt Concrete Road Paver.

concrete has been mixed in the drum, the skip is travelled to the end of the boom near the mixer and the contents of the drum emptied into the skip by means of the usual discharge spout. The boom can be swung round to any desired angle and the skip run out the required distance along the boom, when, by means of a trip gear, the bottom of the skip is disengaged and discharges the concrete at the required position. This method saves a considerable amount of time and labour, especially in view of the fact that the boom is of sufficient length to sweep the entire breadth of any normal road. The firm's standard side loader is used, with slight modifications to meet the altered arrangement of the drum on the frame. The plant is driven by a twin cylinder 10 b.h.p. petrol engine, which operates all motions, including the self-propelling gear, this motion being used only for moving the plant in operation and is not intended for transporting it any great distance. The exhibit also includes a standard No. 0 "Victoria" mixer fitted with automatic water tank and batch charging hopper. The capacity of this mixer is 8½ cubic feet of unmixed materials, giving a mixed batch of approximately 6 cubic feet. The plant is fitted with fast and loose pulleys for belt drive, and represents a type of plant sold in large numbers by the makers. The "Smith" hand mixer is shown, an interesting feature of which is the internal arrangement of the drum, which is such that the materials are constantly passed backwards and forwards through a restricted opening and quickly become mixed.

The "Kirk" concrete block making machine (R. H. Kirk & Co., Collingwood House, St. Peter's, Newcastle-on-Tyne) makes every description of block up to five feet in length, such as sills, steps and copings. A large number of moulds are shown with this machine for producing blocks in various sizes and with various faces. The blocks are made on the face-down principle, and after the concrete has been rammed the mould is turned completely over and the blocks removed face uppermost.

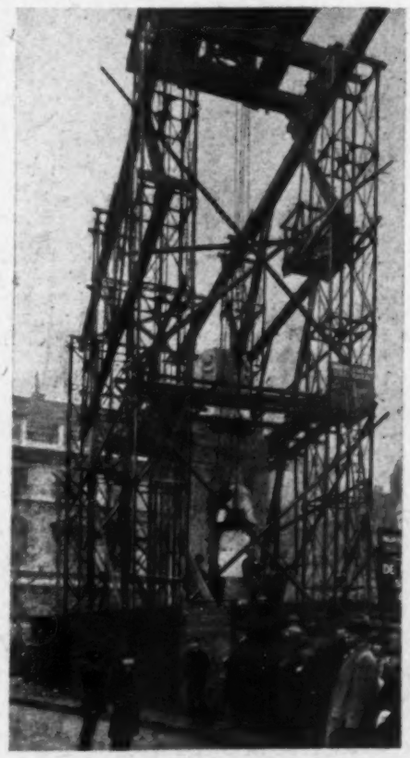
Mr. Henry Wilde (8, Manor-park, Lewisham, S.E. 13) specialises in power plant for the manufacture of concrete blocks, roofing tiles, fence posts, &c. Most of the machines are so constructed that they can be worked by either power or hand. One of the special features of this stand is the power tamper working over the "Anchor" block machine. Each tamper foot strikes seventy blows per minute and each blow comes down with a weight of 700 lb. The blocks made in the "Anchor" machine, owing to their special construction, form dry houses. In proof of this, a block is shown which, though made of breeze, is standing in water up to half its depth, yet not a sign of moisture has found its way up.

New types of concrete block-making machines are shown under working conditions by the "Manelite" Co. (1, Petra-place, Pool-hill, Bournemouth). The hand machine is extremely simple in operation; the blocks are made on end and the mould raised and lowered by means of a lever at the side of the machine, which actuates a wire rope running over a pulley-wheel and attached to the bed-plate of the mould. The power machines are operated by hydraulic power, the movement of a lever simultaneously raising the cover of the mould and lifting the finished block to above the level of the machine ready to be carried away.

Messrs. Builders' & Contractors' Plant, Ltd. (17, Victoria-street, S.W. 1) show a range of builders' plant. The "Roll" patent concrete mixers have capacities of ½ to 1½ cubic yards, portable or stationary, with or without automatic charger. The closed drum prevents splashing of the liquid on the rollers. The gravity discharge facilitates the use of concrete cart and jubilee wagons. The "Exe" patent hoist, for hoisting materials during building operations, has "T" iron rails, giving great rigidity. The revolving head enables material to be dealt with expeditiously and easily, as all the material is turned in at a convenient height, and the jib attached to the head handles bulkier articles, such as joists, timber, etc. The winch is solidly constructed in steel, and has a speed of 200 ft. per minute. The "Fircrete" patent timber clip is a new clip for the fastening of timber, sheeting, etc., for concrete constructions. The clip is slipped round the timber and a small lever adjusts the wedge to give an immovable grip. The "Plus" concrete brick maker is constructed to make blocks in sizes up to 15½ in. by 11½ in. by 9½ in.

SCAFFOLDING AND LADDERS.

The uses of "Scaffixer" scaffold lashings are demonstrated by the Patent Rapid Scaffold Tie Co. (43, Lansdowne-road, Stockwell, S.W.) by a section of scaffolding secured with these chains. Our illustration is of the steel tubular gantry which was erected by the Company for Messrs. De Lank Quarries, Ltd., for the purpose of erecting the Nurse Cavell Memorial. This gantry was calculated to lift blocks of stone up to 10 tons in weight; "Scaffixer" scaffold lashings were exclusively used for the bracings and ties, and the structure successfully stood all tests. The firm are also showing "Scaffixer" blocks, spanners and brackets.



"Scaffixer" Scaffolding at the Nurse Cavell Memorial.

An appliance for making a temporary platform by means of ladders is exhibited by Mr. Edward Leigh, of 84–85, Tamworth-road, Croydon. By gripping the sides, instead of depending wholly on the stave of a ladder, strength and rigidity is obtained. The brackets can be quickly put in position, and make a platform 18 in. wide.

CEMENT.

Messrs. Herbert Fender & Co. (256,–329, High Holborn, W.C.1) are demonstrating the "Recelt" and "Kelasto" preparations. The "Recelt" preparation is for the purpose of making it possible to store animal, vegetable or mineral oils, no matter what percentage of free fatty acids, in concrete containers. The preparation is a chemical enamel, impervious to the action of oil or water, which, when applied by brush to the surface of tanks, of concrete, brick or similar materials, enables oils to be stored with absolute safety and without any loss up to very high pressures. Petrol has been stored continuously for periods varying up to eighteen months so far, at varying pressures up to 130 lbs. per square inch, and various temperatures up to 100 deg. Fahr., always without any penetration of the "Recelt." "Kelasto," which was the secondary discovery arrived at in the course of experiments for the production of "Recelt," enables acids or admixtures of acids, with the sole exception of sulphuric above 1.250, to be similarly stored. An incidental application of "Kelasto" is that it prevents corrosion of any kind to metal work. In this connection, tests have been carried out on smoke-plates, bridges, etc., under which trains are constantly passing, with a blast of 135 lbs. per square inch at a temperature of 400 deg. Fahr. of sulphuric fumes and acids, all of which when treated with "Kelasto" have withstood these conditions for a very long time. Under conditions where a normal accumulation of rust and deposit can be shown to be 1½ cwt. to 2 cwt. per annum over a certain area, this area treated with "Kelasto" is absolutely unimpaired, and there is neither rust nor deposit after a year's test. The preparation is also impervious to water, either salt or fresh, and has been used for the damp coursing of buildings, protection of land or marine cables, piers, piles standing in the sea, ships' hulls, floating cranes, etc.

"Super-cement," the well-known oil, water and petrol-proof cement, is shown by Messrs. Super-Cement, Ltd. (71, Lincoln's Inn Fields, W.C.2). The exhibits include vessels made of the material, and breeze concrete trays rendered waterproof by brushing over the insides with a slurry of "Super-Cement." Specimens of "Super-Cement" are shown under hydraulic pressure, demonstrating its high compressive strength. "Super-Cement" is a high-grade, waterproof variety of Portland cement which has been submitted to special chemical treatment during the course of manufacture. Owing to the more complete reaction which takes place when it is mixed with water, the concrete or mortar becomes so hard and dense that water cannot penetrate it. "Super-Cement" is sold in bags and gauged in exactly the same manner as Portland cement. The concrete made with it is a waterproof mass, and when applied to walls as a vertical damp-course it adds considerably to their strength.

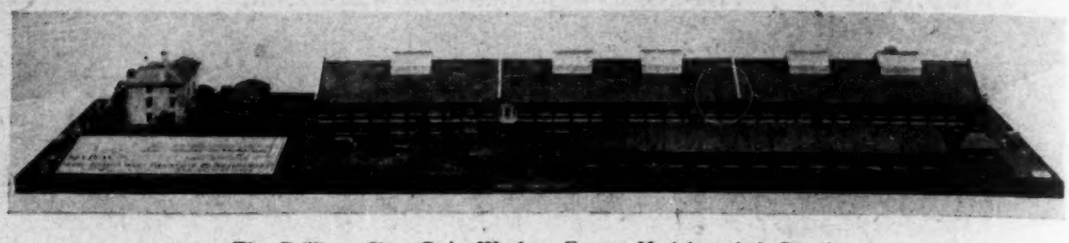
PAINTS AND VARNISHES.

A new paint stripper is exhibited by the Glasso Co. (209, City-road, E.C. 1). This stripper may be rapidly applied with a fibre brush, and will reduce the oldest and toughest paint and varnish to a soft pulp in from three to twenty minutes. It can then be peeled or washed off, and the wood is clean and ready for fresh paint. It contains no acid.

For the display of their enamels, Messrs. Aspinall's Enamel, Ltd. (Goodwood-road, S.E. 14) have erected a fibrous-plaster decorated pavilion, with eight columns, a bay window, and a domed roof. All the work on the stand has been prepared under ordinary conditions, and effectively demonstrates the smooth work which can be carried out in all colours with the firm's manufactures.

Messrs. Cuirass Products, Ltd. (39, Victoria-street, S.W. 1) are showing a selection of anti-fouling and anti-corrosive paints. These paints are not affected by atmospheric influences, sea water, vibration, expansion or contraction, and have great resistance to electrolysis. Also they are not affected by 50 per cent. solutions of sulphuric acid or caustic soda. One cwt. of "No. 1" paint will cover, according to smoothness of surface, 10,000 to 15,000 sq. ft. of flat metal; it is, therefore, very economical in use. The paint (applied cold) has a flash point of over 110 degs. Fahrenheit, and, does not come under the Petroleum Act. A damp-course material is shown, which may be applied in its semi-liquid state cold to bricks or cement, and spread with a trowel or stiff brush. In addition to being a satisfactory damp-course, it acts also as a binder, taking the place of cement.

The well-known paint and enamel products of Messrs. R. Gay & Co., Ltd. (Langthorne



The Brilliant Sign Co.'s Works. From a Model on their Stand.

Works, Stratford Market, E. 15), are displayed on models and panels. A feature of the stand is a set of three painted panels, harmonising in tone, which appear in frames at stated intervals.

The stand of Messrs. Robert Kearsley & Co., Ltd. (Ripon) represents a Greek temple, with forecourt. In the front is a semi-circular colonnade of the Doric order, with a small circular domed temple in the centre. The woodwork has been prepared and finished throughout with Messrs. Kearsley's well-known decorating materials, the main walls being finished with "Arkalac" flat enamel, and the columns with "Arkalac" gloss. The surfaces are extremely glossy, smooth and hard.

The fine results achieved by applying paints, varnishes and enamels by the "Aerograph" are well illustrated on the stand of the Aerograph Co., Ltd. (43, Holborn Viaduct, E.C. 1). This method of applying paints, &c., results in a very smooth and even finish, and it is stated that such work can be carried out in one-sixth of the time taken by brush methods. The "Aerograph" will distribute the heaviest pigments, and may be used on every description of work, from bridges to decorative panels.

Some attractively-coloured panels demonstrate the possibilities of "Filocol" distemper on the stand of the Gelatinous White Co., Ltd. (Harefield, Middlesex). Four shades of white are shown for use on ceilings, and a variety of colours for wall and frieze decoration.

Messrs. Major & Co., Ltd., of Hull, have an attractive stand built of timber, surrounded by a wood fence, on which "Solignum" wood preservative stain is used. The value of "Solignum" as a wood preservative is well known, but its possibilities as a decorative stain for indoor work are not so much appreciated, and the interior of the buildings showing all woodwork stained with "Solignum" is of special interest.

SANITARY APPLIANCES.

The Patent Tip-up Bath Co. (Bath House, Broad-street, Birmingham) exhibit a bath which should serve a useful purpose where space is limited. The foot of the bath is placed a distance from the wall corresponding to its height from the floor, and when not in use, may be tipped up and stood on end. The waste pipe, which enters the bath at one side at the foot, is so designed that a portion of it rotates with the bath when the latter is being tipped, the opposite side of the end being hinged to the floor. The joint in the outlet pipe is quite water-tight.

GENERAL.

Messrs. Battiscombe & Harris, Ltd. (47–49, New Cavendish-street, W. 1) have a good display of architectural decorations, especially noteworthy being the mantels, chimney-pieces, cornices, capitals and reliefs in fibrous plaster. These decorations are carried out to harmonise with rooms of all periods, and some excellent designs may be seen. Some very attractive electric light fittings, tripods and flower stands in various periods are also shown on the stand. Sections of ceilings and panelling in fibrous plaster in periods, a variety of mouldings and a selection of mirrors are also exhibited.

A patent picture moulding, which prevents dust accumulating at the top of mouldings, is exhibited by Messrs. W. A. Hudson, Ltd. (Curtain-road, E.C.). The hook to hold the picture is suspended from a piece of sheet metal placed at the back of the wood moulding, so that the top of the moulding is made to slope down; the hooks are movable and can be placed in any position. The firm is also showing an assortment of stair rods in wood and brass, including their patent stair eyes, and several designs of stair nosings and a large assortment of casement fittings.

Messrs. Nettlefold & Sons, Ltd. (54, High Holborn, W.C. 1) have on show a very large selection of high-class door and window fittings, including the "Bardsley" door check and spring, with single and double action; the "Perfect" ball-joint in various forms, and applied as a hinge to an ordinary office or house door, a hospital door, a cold storage door, and a steel bulkhead door. Examples of practically every description of general ironmongery are also shown, and many electrical conduit fittings. The "Orbis" fanlight opener and rising jack is particularly well designed, and among a larger number of tools the "Reliable" ratchet-spanner for general use may be mentioned; special sets of these spanners are made for automobiles, &c.

Messrs. Marryat & Scott, Ltd. (28, Hatton-garden, E.C. 1), lift specialists, are exhibiting some interesting examples of their equipment. A complete electric service lift, adaptable for hotel, restaurant or private house use is shown operating under actual working conditions. The control is effected by pressure of suitably marked buttons, and safety in operation is assured by several novel fitments; the capacity of the lift is 1 cwt., and the approximate cost for current is fifty to sixty trips per 1d. The firm's standard "Osborne" type passenger lift car is exhibited to demonstrate the action of the passenger safety gear; this device, in the event of stretching or failure of the lifting ropes, automatically operates, and sustains the load by securely gripping the guide runners. The car is shown fully loaded supported by this safety gear. A range of controlling equipment, including safety lift locks, passenger and service type gears and controllers are also shown.

The Brilliant Sign Co., Ltd. (38, Grays Inn-road, W.C. 1) have a comprehensive display of their well-known signs for shop-fronts, projecting signs and facias, and for window decoration in the form of ribbons, background work, &c. Samples are shown of "Permanart" backgrounds for lettering in a large variety of attractive colours. These signs are shown in sizes to suit all purposes, and the firm is prepared to undertake contracts irrespective of the size of the work. Gilt-wood letters, bronze metal plates, brass tablets and metal letters, plain or enamelled, are shown. These are all from stock and not specially prepared for exhibition purposes. A model of the firm's works, wherein five hundred persons are employed (which we illustrate above) is shown.

The Training Department of the Ministry of Labour has a stand on which disabled soldiers and sailors are seen at work, and specimens of their work are exhibited. These men have been trained at the London training centres, many, having now completed their courses, and being available for employment. All the men are trained for occupations wherein their particular disability will be the least hindrance to them—the trades including stone carving, plumbing, heating engineering, white smithing, plastering, bricklaying, masonry, joinery, wood machining, painting, decorating, repair and maintenance of gas and water fittings, making and repair of leaded lights, oxy-acetylene welding, marble polishing by machinery, and stone-working machine processes. Some very good work is shown on the stand and it is hoped that an examination of the examples shown and the methods of training adopted will demonstrate to employers of labour the value of the intensive courses of training in the building trades given to disabled men at Government instructional factories and other training institutions, and will induce them to take a number of trainees into their employment, at the termination of the preliminary period of institutional training, for the completion of their training under the terms of the Revised Building Report.

The "Osda" Branch of Houghton Butcher Manufacturing Co., Ltd. (Tudor Works, South Hackney, E.9) manufacturers of levelling staves, range poles, drawing boards, trestle tables, tee squares, labour-saving devices for offices, cabinets for card indexes, vertical filing, stationery, desks, roll top tables, office tables, chairs and the patent "Osda Easiroll" typist bureau, have on view a very wide selection of useful fittings and furniture for use in offices.

Messrs. J. Halden & Co., Ltd. (8, Albert-square, Manchester) are showing a selection of their well-known equipment for the use of engineers, architects and surveyors, both in the field and in the drawing office. The

Fibrous-Plaster Decoration. By Messrs. Battiscombe & Harris, Ltd.

"Halden" duplex radial electric photo copying frame is shown, to which an improved patent cover stretching device is fitted by which perfect contact is ensured over the whole surface of the tracing. A semi-cylindrical frame suitable for small users is also shown, together with examples of washing and drying plant. The "Standard" drafting table is fitted with the latest improved parallel straight edge. The ease of manipulation and absolute accuracy of the straight edge are but two of its advantages. Drawing instruments and filing cabinets for drawings are also shown.

"Alligator" steel belt lacing for repairing machinery belting is shown by Mr. Clarence Brewer (209, City-road, E.C. 1). This lacing is clipped on to the ends of the belting with a hammer, no special tools being required. When fixed, the lacing is smooth on both sides of the belt, and can be used in serpentine drives.

The application of concrete to sewer work is demonstrated by Messrs. Sharp, Jones & Co. (Parkstone, Dorset) by a striking display of sewer tubes, junctions, outlet pieces, manholes, and foundation pieces for manholes. The tubes range from 1 ft. to 6 ft. in diameter, both straight and tapered. A curved tube is shown, made in one piece, and other curved tubes are shown made in sections. The firm are also showing samples of rock concrete roofing tiles and reinforced concrete sleepers for use on railways. These sleepers, owing to the smallness of the cost of maintenance, show a considerable economy as compared with wooden sleepers, and are being largely used by the railway companies.

A comprehensive display of equipment for use in pile driving is on view at the stand of the British Steel Piling Co. (Dock House, Billiter-street, E.C.), including examples of steel sheet piling, pile driving machinery, friction winches adapted for use with steam, petrol and electricity, and concrete mixers. A good winch is practically indispensable on any large works where heavy materials have to be hauled or hoisted; in addition to these purposes, the "Zenith" winch shown on this stand is suitable for pile driving, well-sinking, cableways, and similar services. Other specialities of the firm are the McKiernan-Terry patent double-acting automatic pile hammer, for air or steam power, for driving and withdrawing piles; the "B.S.P." single-acting, semi-automatic pile hammer, for air or steam power; "Zenith" sand and ballast washers, and "Zenith" concrete mixers and placing plants.

The Titan Lift Co., Ltd. (20, High Holborn, W.C. 2) are showing a five-floor push-button lift, drum type, suitable for four people; a V-sheave type, six-passenger lift for push-button or car switch control; a V-sheave type four-passenger lift for push-button or car switch control; and a service lift, suitable for loads of 1 cwt., with push-button control.

A good display of garden ornaments in "Pulhamite" stone is exhibited on the stand of Messrs. Pulham & Son (Broxbourne, Herts.), the well-known garden craftsmen, including statues, fountains, sundials and coping.

Messrs. Robert Johnson & Co. (London-road, Leicester) have on exhibition a panelled mahogany dining room in the Georgian style, completely furnished and fitted. The panelling, in Cuban mahogany, dull polished, is the full height of the room, with carved cornice, dado and plinth mouldings. The chimney-piece has carved and fluted pilasters with *Vert du Mer* marble moulded slips, kerb and hearth, and is fitted with a dog grate. The ceiling decoration is in modelled plaster in the Georgian style. Two bedrooms, completely furnished with flat enamelled furniture of simple but distinctive design, with carpets, curtains, &c., all specially selected to give fine colour effects, are also shown.

Messrs. Essex & Co., Ltd. (114 & 116, Victoria-street, S.W. 1) are exhibiting their 1920 series of "Westminster" wall-papers and a large selection of tapestries, chintzes, damasks, canvas effects, plain papers, leathers, &c., to suit all styles of decoration. Embossed papers and raised materials are shown, with suggestive methods of decorative treatment. "Walpamur," a water paint, is also exhibited; samples are shown which have been applied under similar conditions to those in which the general decorator works, and not specially prepared for exhibition purposes. "Sèvres" enamel is used on the stand to illustrate its quality and appearance when applied in the general work of decoration.

Messrs. Underwood (Manchester), Ltd. (53, Brown-street, Manchester) are showing a large selection of illuminating glassware ("Moonstone"). The glass is of Canadian manufacture and when lighted exhibits a uniform luminous appearance, diffusing the light in a manner very restful to the eyes; it does not colour the light, but softens it in a pleasing way, closely resembling daylight. A variety of new types of table standards are also shown, together with an instantaneous electric water heater.

Town-Planning Exhibition at York.

A housing and town-planning exhibition in the City Art Gallery, York, which has been organised by the Museum and Art Gallery Committee of the York Corporation in conjunction with the Garden Cities and Town-Planning Association was opened last week. The exhibition comprises a large series of plans adopted for the future development of many cities in the country, and the lay-out of estates now being developed as garden cities and villages. Amongst the latter is the New Earswick Village Trust estate near York, and Messrs. Bell Bros. estate at Haverton Hill, Stockton, in connection with the Port Clarence works. The approved plan for York with a circumferential road round the city, which provides for a bridge over the York and Scarborough railway near Burton-lane, and a river bridge at Clifton in place of the ferry, is also on exhibition. Included in this plan is the housing scheme by the Corporation now in progress at Tang Hall, which includes a school site and a lay-out in Clifton and Bootham ward for industrial dwellings, factory sites, allotments and a public park.

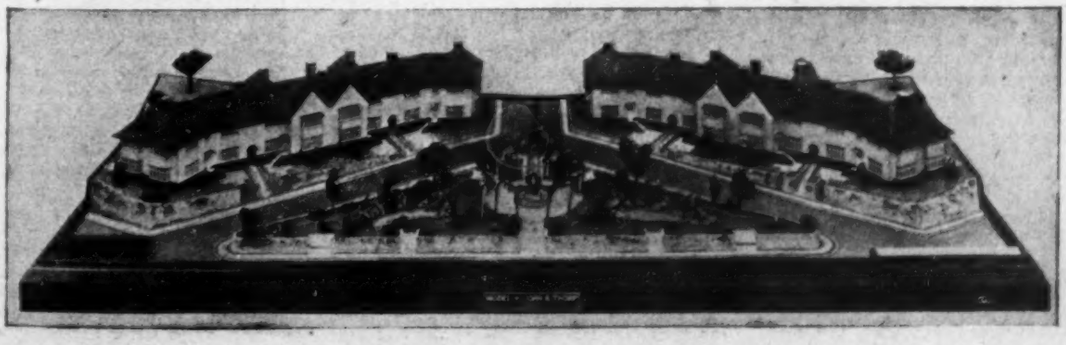
REPORT OF THE COMMITTEE ON THE RENT ACTS.

At the time of writing the full text of the Report of the Committee on the Increase of Rent and Mortgage Interest (War Restrictions) Acts is not available, and we shall deal with the Report in a subsequent article. The main features of the Report appear to be the extension of the Acts to houses of higher rental (£105 in London and £78 outside London), and the continuation of the Acts for a further period of three years.

From the summary of the Report it would appear the Committee was impressed more with the tenants' position than that of the landlords, yet the landlord, in nine cases out of ten, has not been the profiteer, as the excessive rents have often been demanded by tenants assigning the leases for premiums, or sub-letting parts of premises. The extension of the Acts to houses of higher rentals would raise a serious matter of principle in further interfering with economic rents on a larger scale, and this one and a-half years after the cessation of hostilities. The permitted increase in rents of 40 per cent. over the whole period the Acts would be in force seems also wholly inadequate, if, as appears in the summary, repairs are included.

Further restrictions in favour of sitting tenants are also proposed in the Report; a landlord is not to be allowed to obtain possession for his own occupation unless alternative accommodation equally good and suitable in all respects, including rent, can be proved to the Court to be available where the landlord has acquired the premises since September 30, 1917, but even where the property was owned before that date it is suggested that the owner must prove he has a special claim to consideration and that greater hardship would be occasioned by refusing an order for possession than by granting it. Whilst reserving any detailed criticism on the Report, we can only hope that Parliament will hesitate to accept it without most careful consideration and investigation.

The Acts have not worked so equitably that an extension to higher valued properties should be lightly conceded. In all other directions an increasing desire is being expressed that a return may be made as far as possible and as soon as practicable to pre-war conditions and that the law of supply and demand should again prevail. In times such as these the protection of one particular class from the conditions brought on entirely by the war is a very doubtful experiment; sooner or later all classes have to face the altered conditions and to meet the increased cost of living. Those who have been in a protected zone must eventually come into the open and pay the altered prices like the rest of the population. The extension of the Acts to higher values and for a longer period is only putting off the day when actual conditions must be faced, and it has the further very serious drawback in that it tends to widen the gulf between the economic rent that must be charged for new houses and the artificial rent of houses brought within this statutory protection. It thus increases the difficulties of the general public and favours one class—the sitting tenants.



Model of Cottages, &c., in a Garden City. An exhibit by MR. JOHN B. THORP on "THE BUILDER" Stand.

PROPOSED NATIONAL BUILDING CODE.—VIII.

[Permission has been granted to the *Builder* by the National Federation of Building Trades' Employers to reprint the proposed National Building Code (which that body approved at a general meeting recently held in London) above the notes of a legal contributor. The previous articles appeared in our issues of February 13 and 27, March 12, 19 and 26, and April 9 and 16. These articles will be continued until the whole Code has been carefully considered. The various clauses of the Code itself will be inset in the columns, followed by the comments of our contributor, whose views, we would emphasise, are not necessarily our own.]

Schedule of Conditions (*continued.*)

Clause 30

"(*a*) THE CONTRACTOR SHALL SUSPEND THE WORKS on an instruction in writing from the Employer, or the Architect on his behalf, so to do, subject to conditions of Clauses 27, 28 and elsewhere.

"(*b*) If the Contractor shall neglect or fail to proceed with the Works with due diligence, or if he shall more than twice make default in the respects mentioned in Clause 19, the Employer by the Architect shall have power to give notice in writing to the Contractor requiring that the Works be proceeded with in a reasonable manner and with reasonable dispatch. Such notice shall not be unreasonably or vexatiously given, and must signify that it purports to be a notice under the provisions of this Clause, and must specify the act or default on the part of the Contractor upon which it is based. After such notice has been given the Contractor shall not remove from the site or Works, or from any ground contiguous thereto, any plant or materials belonging to him which shall have been placed thereon for the purposes of the Works; and the Employer shall have the right to use such plant and materials, but only for the purpose of the completion of the Works, and only from the date on which such notice becomes operative until the completion of the Works. Provided always that such right shall not under any circumstances exist after the expiration of thirty-one days from the date of such notice being given, unless the Employer shall have entered upon and taken possession of the Works and site as hereinafter provided.

"Upon receipt of such notice, the Contractor shall at once proceed with the Works; but if he shall fail for twenty-one days after such notice has been given to proceed with the Works as therein prescribed, except as hereinafter provided, the Employer may enter upon and take possession of the Works and site, and of all such plant and materials thereon (or on any ground contiguous thereto) intended to be used for the Works, and the Employer shall retain all such plant until the Works shall have been completed under the powers hereinafter conferred upon him.

"(*c*) If the Employer shall exercise the above power, he may engage any other person to complete the Works, and exclude the Contractor, his agents and servants, from entry upon or access to the same, except that the Contractor and/or any one person nominated by him with reasonable assistance shall have access at all reasonable times to inspect, survey and measure the works and materials and to take an inventory of plant. And the Employer shall take such steps as may be reasonably necessary for completing the Works without undue delay or expense, using for that purpose all materials abovementioned, together with any other material prepared for the Works, and any of the plant suitable.

"(*d*) Upon the completion of the Works, the Surveyor shall measure and the Architect shall certify the amount of the expenses properly incurred consequent on and incidental to the default of the Contractor as aforesaid, and in completing (in manner provided by this Contract) the Works by other persons, after allowing for a reasonable charge due to the Contractor for the use of the plant mentioned, and after giving credit for any material not used and sold by the Employer. Should the amount so certified as the expenses properly incurred be less than the amount which would have been due to the Contractor upon the completion of the Works by him, the difference shall be paid to the Contractor by the Employer; should the amount of the former exceed the latter, the difference shall be paid by the Contractor to the Employer.

"After the Works shall have been so completed by persons other than the Contractor under provisions hereinbefore contained, the Employer shall give notice to the Contractor of such completion, and the Contractor shall then be at liberty to remove his plant and all unused materials (unless paid for by the Employer), and the Employer may require the Contractor from time to time before and after such completion, to remove his plant from the site. If such plant and unused materials are not removed within a reasonable time after notice shall have been given, the Employer may remove and sell the same, holding the proceeds, less the cost of the removal and sale, to the credit of the Contractor. Any notice to be given to the Contractor under this Clause shall be given by leaving the same at the last known address of the Contractor, or by registered letter sent to him at that address.

"(*e*) THE CONTRACTOR AT HIS OPTION MAY SUSPEND THE WORKS on account of any delay arising from any cause mentioned in Section (*b*) of Clause 27 hereof, which causes a stoppage of more than fourteen days and should any such suspension involve any extra cost or expenses to the Contractor, then such extra cost or expenses shall be allowed to the Contractor by the Employer.

"(*f*) If any such suspension from any cause outside the Contractor's control (except from any strike or lock-out) last for more than three months, then the Contractor shall be at liberty, at his option by notice in writing to the Employer or the Architect, to determine the Contract, and in such case he shall be entitled to recover from the Employer payment for all work executed, and for any loss he may sustain upon any plant or material supplied or purchased and/or prepared for the purpose of the Works, together with a sum for profit on the work still uncompleted.

"(*g*) If and in case either party shall become bankrupt or shall file any petition in bankruptcy or have any petition filed against him, shall call or cause to be called a meeting of his creditors, shall execute any assignment for the benefit of his creditors, shall execute or enter into any deed of arrangement (whether generally or for the benefit of particular creditors, or intended primarily for the benefit of himself and his family), shall give any Bill of Sale, or shall (if a Company or Corporation) have any order made against them for compulsory winding up, or shall pass any effective resolution for voluntary winding up by reason of inability to pay debts, or otherwise become subject to the bankruptcy laws, the other party may then, within one month from the date on which he first becomes aware of any such event, summarily terminate the contract by notice in writing (except so far as may be necessary for the assertion of his rights hereunder), without any compensation to the other party.

"(*h*) IN THE EVENT OF SUCH SUMMARY TERMINATION BY EITHER PARTY THEN THE FOLLOWING PROVISION SHALL APPLY:—

"If the Employer shall elect to terminate the Contract under the provision (*g*) above, he shall give the requisite notices and take possession as set out in Section (*b*) above, subject to the rights of the Contractor therein contained. Provided always that if the business of the Contractor be taken over and/or carried on by a Committee of Inspection on behalf of creditors or by a Trustee in Bankruptcy, or by Trustees on behalf of the Contractor, his heirs or assigns, or by a Trustee in Lunacy, then such person or persons at their option may adopt the Contract, and if they so decide they shall give notice to the Employer (within 31 days of their appointment in such capacity) of their intention to complete the Works subject to these presents, and/or should sureties have been bound for the due fulfilment of the Contract they shall have a similar option to complete the works as set out above.

"(*i*) If the Contractor shall elect to terminate the Contract under the provision (*g*) above, then the Employer or his Trustee or Committee under any deed of arrangement, or (in case of a Corporation or Company) the Liquidator may within ten days from service of such notice to terminate, elect by notice in writing given to the Contractor to proceed with or adopt the Contract, and shall at once furnish to the Contractor good and sufficient security for the due observance, and the performance of, the obligations (both past and future) of the Employer under this Contract.

"(*j*) The Contractor may immediately on giving such notice suspend the Works, pending and until a settlement is effected, and should he do so the period of such suspension shall be taken into account and allowed for both as to period of delay thereby occasioned to and expenses thereby incurred by the Contractor.

"(*k*) If the Contractor shall give notice to terminate in accordance with Section (*g*) above, and failing election by the Trustee or Committee under Section (*i*) above, to adopt or proceed with the Works, then at the expiration of the ten days' notice the Works shall be measured up and the cost of all work executed by the Contractor, including all variations and day-work items, together with any loss he may have incurred on any plant or material purchased for the work, and any further expenses in consequence of such termination, and such a sum as will cover the profit anticipated on the uncompleted portion of the Works, and such sum shall be included in a certificate of the Architect, and shall become immediately due and payable to the Contractor, despite any Clause herein contained; and such sum so ascertained shall be and is hereby charged on the land, buildings, and premises the subject of this Contract, and the Contractor may at his option retain possession of the Works until payment has been made to him in full settlement of his claims as set out above.

"(*l*) Provided always that the Contractor, failing his adoption under Section (i) as above, and failing payment in full of the amount due to him as aforesaid, or full security for same, may take full possession of the Works on payment by the Contractor to the Employer of any sums received on account of the Works, together with an indemnity to the Employer for any other dues and charges thereon (if any) and the Employer in such event agrees to assign and transfer all his interest in the property, and to do any acts or things required to make such transfer full and complete; provided that if the Employer has effected any charge or charges on the Works, the sum to be paid by the Contractor to the Employer shall be reduced by the amount of such prior charge or charges."

This Clause, consisting of upwards of 1,800 words, is not only long and involved, but is also confusing by reason of the fact that it deals with three separate and very important matters in one Clause, sub-divided into 12 sub-clauses and again sub-divided by the use of capital wording. This latter sub-division is intended to clarify the meaning but really adds to the

confusion, because it is found that such sub-divisions are not self-contained but are overlapping in nature in respect of the matters with which they purport to deal. It is quite clear that the Clause should be re-drafted as three separate Clauses, and that the divisions of it now made should be re-adjusted.

The matters dealt with are as follows :—

(1).—*Suspension of the works on the instructions of the employer owing to the contractor failing to proceed with the works with due diligence; the employment of other contractors to complete the work and the adjustment of accounts.*

Sub-clause (*a*) has nothing whatever to do with this subject, which is dealt with exclusively in Sub-clauses (*b*), (*c*) and (*d*.) Having regard to the other provisions of the Code, which appear to give proper protection to an honest and fair-minded contractor in the event of any contingency arising to his prejudice, it would have been better had this Clause been very much more severe, with a clear and unambiguous right given to the employer to forfeit or to hold the plant and materials as security for the damage which he suffers by reason of the breach of the contractual obligations by the deliberate fault of the contractor. On the other hand, although the Clause is generally in harmony with the old R.I.B.A. form, it is modified for the benefit of the contractor in one or two respects, which seem to give protection to firms which are hopelessly mismanaged or deliberately dishonest, and the actual effect would be to give protection to the black sheep in the flock of the Federation instead of merely safeguarding the interests of their members in a fair manner as between employer and contractor. For example, before the formal notice by the architect can be given by reason of the contractor's failure to remove and make good materials or workmanship not in accordance with the descriptions in the bill of quantities, the contractor must have made default in this respect more than twice instead of more than once.

The R.I.B.A. form, however, was not, in view of the other provisions of the Code, a Clause sufficiently protective of the employer, because while it provided for completion of the work by another contractor in the case of failure by the original contractor, it did not give any lien upon the plant and materials of the contractor beyond the period of completion of the work, and it made the extraordinary provision that if the expenses incurred in the completion of the work were less in amount than those which would have been due to the contractor upon the completion of the work by him, the difference should be paid to the contractor by the employer. While it is, of course, extremely unlikely that any saving will be made by the employer in carrying out the work by another contractor, the fact that such a saving is made will be proof that the contractor's price was too high, and it seems ridiculous that if the contractor has committed a breach of the contract he has still to have the benefit of his inflated tender price.

There are many phrases in this new Clause which are far from clear. In Sub-clause (*b*) the words "the right to use plant and materials" have been substituted for the words "a lien upon the plant and materials" in the R.I.B.A. form, and this right is to take effect from the date on which the notice of dissatisfaction "becomes operative" as distinct, if there is any distinction, from the date on which such notice is given. In Sub-clause (*d*), "completion of the work" should read "actual completion" as distinct from completion as defined by Interpretation of Terms Clause No. 6. The very limited power given to the employer to sell the plant of the contractor if not removed by him within a reasonable time after receipt of a notice to remove the same, is particularly vague, and an employer would act at a very serious risk in exercising this power. A definite period should be inserted instead of the phrase "a reasonable time."

(2).—*The right of the employer or the contractor to suspend the work for special reasons and the rights of the parties upon such suspension.*

This matter is dealt with by Sub-clauses (*a*), (*e*) and (*f*). Sub-clause (*a*) provides that the contractor shall suspend whenever he receives an instruction in writing from the employer or the architect to do so, but such suspension shall be subject to the provisions of Clauses 27 and 28, which have already been referred to, dealing with delays and covering in the works during suspension. Sub-clauses (*e*) and (*f*) refer to Sub-clause (*b*) of Clause 27, and have already been commented upon under the notes to that Clause.

(3).—*The summary termination of the contract in case of insolvency of either the employer or the contractor and the respective rights of the parties upon such termination.*

This matter is dealt with under Sub-clauses (*g*) to (*l*), and it is very interesting to find that the Federation has made an attempt to regulate the rights of the parties to the contract on the insolvency of either of them, instead of leaving the matter untouched to be dealt with under the Bankruptcy Laws, as done in the R.I.B.A. form. How far the provisions of the Code in this respect will have legal sanction in the event of actual bankruptcy or compulsory winding up is in serious doubt, as will be explained hereafter. Broadly, the provisions are :—

(*a*)—In the event of an act of bankruptcy by the contractor the employer may :—(i) summarily terminate the contract without compensation to the contractor, and (ii) take possession of the works and complete as provided by Sub-clause (*d*) for the event of failure by the contractor to proceed with the works, but, as has been explained above, this gives no lien upon or property in the plant and materials of the contractor.

(*b*)—In the event of an act of bankruptcy by the employer, the contractor may :—(i) summarily terminate the contract without compensation to the employer, and (ii) take possession of the land, buildings and premises the subject of the contract until all his claims (including anticipated profit on the uncompleted work) have been met and become legally possessed of the same on the repayment by him of any sums received on account of the works less any prior charges upon the said property.

It is true that in both cases the contract purports to give the trustee in bankruptcy, &c., certain specified rights to adopt the contract by notice, in the case of the contractor's bankruptcy, within 31 days of the appointment of the trustee, and in the case of the employer's bankruptcy, within 10 days of the notice of termination of the contract, but the provisions generally are probably invalid as being an attempt to defeat the rights of the trustee for the creditors in general of the bankrupt. The law is by no means settled on this subject, but there is little doubt that the provision which gives the contractor the right to the possession of the lands, &c., of the employer in the event of his bankruptcy is a provision purporting to give the contractor a power to control the user, after bankruptcy, of property vested in the bankrupt at the date of bankruptcy, and as such is invalid as a "controlling" of the property of the bankrupt (Ex parte Barter in *re* Walker, 51 *Law Times*, 811). Moreover, the termination of the contract itself on bankruptcy may be void against the right of the trustee to elect to complete the contract which he has under the Bankruptcy Act, because while the Code makes certain provisions for the trustee to have this right, the conditions under which he may exercise them are not the same as those provided by the Act. Under the Act, the contracts of the bankrupt, except in certain protected transactions, are vested in the trustee of the bankrupt, and the trustee has a right to disclaim any unexecuted contract that in his opinion would not be beneficial to the estate within 12 months of his appointment or within 28 days (or such extended time as the Court may allow) from the receipt of a written notice requiring him to make his decision from a person interested in the contract

It will be seen how different are the conditions under the Code from those under the Bankruptcy Act, and, although there is no express judicial decision on this latter point, the following *dictum* approved by the Court of Appeal in the above quoted case appears to throw some serious doubt upon the validity of the Code provisions :—"The general distinction seems to be that the owner of property may, on alienation, qualify the interests of his alienee by a condition to take effect on bankruptcy, but cannot, by contract or otherwise, qualify his own interest by a like condition, determining it or controlling it, in the event of his own bankruptcy, to the disappointment or delay of his creditors."

Another observation which must be made on these Sub-clauses is that, while the insolvency of the contractor does not entitle the employer to hold the plant of the contractor until his claims have been met, but only to use it during the completion of the work as provided by Sub-clause (*d*), the insolvency of the employer, on the other hand, purports to entitle the contractor to hold the lands, buildings and premises of the employer until his claims have been met and to have the same conveyed to him if he should pay the sums already received on account of the works. Now the insolvency of a contractor appears to be equally detrimental to the employer as that of the employer to the contractor, because it means that the employer will have to expend additional money on the works of as great an amount, if not greater, than the money which, at the time of the employer's insolvency would be properly owing to the contractor. It seems that an ideal building contract would endeavour to give to both employer and contractor the completest security against the failure of either party to carry out their obligations, but in any case we see no reason why the creditors of the one should be dealt with more favourably than the creditors of the other. A curious omission from these provisions is to be noted in the absence of reference to the disposal of retention money in the event of the termination of the contract under this Clause. By Clause 34, retention money is to be deposited by the employer, as it accrues, in a bank in the joint names of the employer and the contractor. The interest accruing on such money is declared to be the property of the contractor and would presumably remain so in any event, but an interesting situation would arise in the event of the bankruptcy of either party as to the property in the corpus of such money, and one would have expected to find the rights of the parties in this connection specifically laid down.

There is an extraordinary reference to the "Trustee in Lunacy" in Sub-clause (*k*). Where this official comes in on termination of the contract by reason of an act of bankruptcy is not clear, unless this is a flash of humour on the part of the Drafting Committee, intending to imply that any contractor who contracts under this Code becoming bankrupt must necessarily also be a lunatic!

(To be continued.)

The Trades' Training Schools.

The Annual Report of the Trades' Training Schools of the Worshipful Company of Carpenters and the Associated Companies of Joiners, Glaziers, Painter Stainers, Tylers and Bricklayers and Wheelwrights for the Session 1918–1919, indicates the useful work which is carried out by these Schools under the directorship of Sir Banister Fletcher, F.R.I.B.A. The report includes illustrations of some of the specimens of craftsmanship in the various classes, and shows a high standard of work, on which the various instructors are to be congratulated. It contains the speeches delivered on the occasion of the distribution of prizes, and we may specially refer to the address of the Director of the Schools, who said, "It is an extremely gratifying fact that, notwithstanding that it was the fourth session held during the war, and despite the enormous drain on our manhood, the Schools are still 'going strong.'" The Session was a very successful one, the average attendance comparing very favourably with the pre-war average.

PROPOSED NATIONAL BUILDING CODE.—VIII.

[Permission has been granted to the *Builder* by the National Federation of Building Trades' Employers to reprint the proposed National Building Code (which that body approved at a general meeting recently held in London) above the notes of a legal contributor. The previous articles appeared in our issues of February 13 and 27, March 12, 19 and 26, and April 9 and 16. These articles will be continued until the whole Code has been carefully considered. The various clauses of the Code itself will be inset in the columns, followed by the comments of our contributor, whose views, we would emphasise, are not necessarily our own.]

Schedule of Conditions (*continued.*)

Clause 30

"(*a*) THE CONTRACTOR SHALL SUSPEND THE WORKS on an instruction in writing from the Employer, or the Architect on his behalf, so to do, subject to conditions of Clauses 27, 28 and elsewhere.

"(*b*) If the Contractor shall neglect or fail to proceed with the Works with due diligence, or if he shall more than twice make default in the respects mentioned in Clause 19, the Employer by the Architect shall have power to give notice in writing to the Contractor requiring that the Works be proceeded with in a reasonable manner and with reasonable dispatch. Such notice shall not be unreasonably or vexatiously given, and must signify that it purports to be a notice under the provisions of this Clause, and must specify the act or default on the part of the Contractor upon which it is based. After such notice has been given the Contractor shall not remove from the site or Works, or from any ground contiguous thereto, any plant or materials belonging to him which shall have been placed thereon for the purposes of the Works; and the Employer shall have the right to use such plant and materials, but only for the purpose of the completion of the Works, and only from the date on which such notice becomes operative until the completion of the Works. Provided always that such right shall not under any circumstances exist after the expiration of thirty-one days from the date of such notice being given, unless the Employer shall have entered upon and taken possession of the Works and site as hereinafter provided.

"Upon receipt of such notice, the Contractor shall at once proceed with the Works; but if he shall fail for twenty-one days after such notice has been given to proceed with the Works as therein prescribed, except as hereinafter provided, the Employer may enter upon and take possession of the Works and site, and of all such plant and materials thereon (or on any ground contiguous thereto) intended to be used for the Works, and the Employer shall retain all such plant until the Works shall have been completed under the powers hereinafter conferred upon him.

"(*c*) If the Employer shall exercise the above power, he may engage any other person to complete the Works, and exclude the Contractor, his agents and servants, from entry upon or access to the same, except that the Contractor and/or any one person nominated by him with reasonable assistance shall have access at all reasonable times to inspect, survey and measure the works and materials and to take an inventory of plant. And the Employer shall take such steps as may be reasonably necessary for completing the Works without undue delay or expense, using for that purpose all materials abovementioned, together with any other material prepared for the Works, and any of the plant suitable.

"(*d*) Upon the completion of the Works, the Surveyor shall measure and the Architect shall certify the amount of the expenses properly incurred consequent on and incidental to the default of the Contractor as aforesaid, and in completing (in manner provided by this Contract) the Works by other persons, after allowing for a reasonable charge due to the Contractor for the use of the plant mentioned, and after giving credit for any material not used and sold by the Employer. Should the amount so certified as the expenses properly incurred be less than the amount which would have been due to the Contractor upon the completion of the Works by him, the difference shall be paid to the Contractor by the Employer; should the amount of the former exceed the latter, the difference shall be paid by the Contractor to the Employer.

"After the Works shall have been so completed by persons other than the Contractor under provisions hereinbefore contained, the Employer shall give notice to the Contractor of such completion, and the Contractor shall then be at liberty to remove his plant and all unused materials (unless paid for by the Employer), and the Employer may require the Contractor from time to time before and after such completion, to remove his plant from the site. If such plant and unused materials are not removed within a reasonable time after notice shall have been given, the Employer may remove and sell the same, holding the proceeds, less the cost of the removal and sale, to the credit of the Contractor. Any notice to be given to the Contractor under this Clause shall be given by leaving the same at the last known address of the Contractor, or by registered letter sent to him at that address.

"(*e*) THE CONTRACTOR AT HIS OPTION MAY SUSPEND THE WORKS on account of any delay arising from any cause mentioned in Section (*b*) of Clause 27 hereof, which causes a stoppage of more than fourteen days and should any such suspension involve any extra cost or expenses to the Contractor, then such extra cost or expenses shall be allowed to the Contractor by the Employer.

"(*f*) If any such suspension from any cause outside the Contractor's control (except from any strike or lock-out) last for more than three months, then the Contractor shall be at liberty, at his option by notice in writing to the Employer or the Architect, to determine the Contract, and in such case he shall be entitled to recover from the Employer payment for all work executed, and for any loss he may sustain upon any plant or material supplied or purchased and/or prepared for the purpose of the Works, together with a sum for profit on the work still uncompleted.

"(*g*) If and in case either party shall become bankrupt or shall file any petition in bankruptcy or have any petition filed against him, shall call or cause to be called a meeting of his creditors, shall execute any assignment for the benefit of his creditors, shall execute or enter into any deed of arrangement (whether generally or for the benefit of particular creditors, or intended primarily for the benefit of himself and his family), shall give any Bill of Sale, or shall (if a Company or Corporation) have any order made against them for compulsory winding up, or shall pass any effective resolution for voluntary winding up by reason of inability to pay debts, or otherwise become subject to the bankruptcy laws, the other party may then, within one month from the date on which he first becomes aware of any such event, summarily terminate the contract by notice in writing (except so far as may be necessary for the assertion of his rights hereunder), without any compensation to the other party.

"(*h*) IN THE EVENT OF SUCH SUMMARY TERMINATION BY EITHER PARTY THEN THE FOLLOWING PROVISION SHALL APPLY:—

"If the Employer shall elect to terminate the Contract under the provision (*g*) above, he shall give the requisite notices and take possession as set out in Section (*b*) above, subject to the rights of the Contractor therein contained. Provided always that if the business of the Contractor be taken over and/or carried on by a Committee of Inspection on behalf of creditors or by a Trustee in Bankruptcy, or by Trustees on behalf of the Contractor, his heirs or assigns, or by a Trustee in Lunacy, then such person or persons at their option may adopt the Contract, and if they so decide they shall give notice to the Employer (within 31 days of their appointment in such capacity) of their intention to complete the Works subject to these presents, and/or should sureties have been bound for the due fulfilment of the Contract they shall have a similar option to complete the works as set out above.

"(*i*) If the Contractor shall elect to terminate the Contract under the provision (*g*) above, then the Employer or his Trustee or Committee under any deed of arrangement, or (in case of a Corporation or Company) the Liquidator may within ten days from service of such notice to terminate, elect by notice in writing given to the Contractor to proceed with or adopt the Contract, and shall at once furnish to the Contractor good and sufficient security for the due observance, and the performance of, the obligations (both past and future) of the Employer under this Contract.

"(*j*) The Contractor may immediately on giving such notice suspend the Works, pending and until a settlement is effected, and should he do so the period of such suspension shall be taken into account and allowed for both as to period of delay thereby occasioned to and expenses thereby incurred by the Contractor.

"(*k*) If the Contractor shall give notice to terminate in accordance with Section (*g*) above, and failing election by the Trustee or Committee under Section (*i*) above, to adopt or proceed with the Works, then at the expiration of the ten days' notice the Works shall be measured up and the cost of all work executed by the Contractor, including all variations and day-work items, together with any loss he may have incurred on any plant or material purchased for the work, and any further expenses in consequence of such termination, and such a sum as will cover the profit anticipated on the uncompleted portion of the Works, and such sum shall be included in a certificate of the Architect, and shall become immediately due and payable to the Contractor, despite any Clause herein contained; and such sum so ascertained shall be and is hereby charged on the land, buildings, and premises the subject of this Contract, and the Contractor may at his option retain possession of the Works until payment has been made to him in full settlement of his claims as set out above.

"(*l*) Provided always that the Contractor, failing his adoption under Section (i) as above, and failing payment in full of the amount due to him as aforesaid, or full security for same, may take full possession of the Works on payment by the Contractor to the Employer of any sums received on account of the Works, together with an indemnity to the Employer for any other dues and charges thereon (if any) and the Employer in such event agrees to assign and transfer all his interest in the property, and to do any acts or things required to make such transfer full and complete; provided that if the Employer has effected any charge or charges on the Works, the sum to be paid by the Contractor to the Employer shall be reduced by the amount of such prior charge or charges."

This Clause, consisting of upwards of 1,800 words, is not only long and involved, but is also confusing by reason of the fact that it deals with three separate and very important matters in one Clause, sub-divided into 12 sub-clauses and again sub-divided by the use of capital wording. This latter sub-division is intended to clarify the meaning but really adds to the

confusion, because it is found that such sub-divisions are not self-contained but are overlapping in nature in respect of the matters with which they purport to deal. It is quite clear that the Clause should be re-drafted as three separate Clauses, and that the divisions of it now made should be re-adjusted.

The matters dealt with are as follows :—

(1).—*Suspension of the works on the instructions of the employer owing to the contractor failing to proceed with the works with due diligence; the employment of other contractors to complete the work and the adjustment of accounts.*

Sub-clause (*a*) has nothing whatever to do with this subject, which is dealt with exclusively in Sub-clauses (*b*), (*c*) and (*d*.) Having regard to the other provisions of the Code, which appear to give proper protection to an honest and fair-minded contractor in the event of any contingency arising to his prejudice, it would have been better had this Clause been very much more severe, with a clear and unambiguous right given to the employer to forfeit or to hold the plant and materials as security for the damage which he suffers by reason of the breach of the contractual obligations by the deliberate fault of the contractor. On the other hand, although the Clause is generally in harmony with the old R.I.B.A. form, it is modified for the benefit of the contractor in one or two respects, which seem to give protection to firms which are hopelessly mismanaged or deliberately dishonest, and the actual effect would be to give protection to the black sheep in the flock of the Federation instead of merely safeguarding the interests of their members in a fair manner as between employer and contractor. For example, before the formal notice by the architect can be given by reason of the contractor's failure to remove and make good materials or workmanship not in accordance with the descriptions in the bill of quantities, the contractor must have made default in this respect more than twice instead of more than once.

The R.I.B.A. form, however, was not, in view of the other provisions of the Code, a Clause sufficiently protective of the employer, because while it provided for completion of the work by another contractor in the case of failure by the original contractor, it did not give any lien upon the plant and materials of the contractor beyond the period of completion of the work, and it made the extraordinary provision that if the expenses incurred in the completion of the work were less in amount than those which would have been due to the contractor upon the completion of the work by him, the difference should be paid to the contractor by the employer. While it is, of course, extremely unlikely that any saving will be made by the employer in carrying out the work by another contractor, the fact that such a saving is made will be proof that the contractor's price was too high, and it seems ridiculous that if the contractor has committed a breach of the contract he has still to have the benefit of his inflated tender price.

There are many phrases in this new Clause which are far from clear. In Sub-clause (*b*) the words "the right to use plant and materials" have been substituted for the words "a lien upon the plant and materials" in the R.I.B.A. form, and this right is to take effect from the date on which the notice of dissatisfaction "becomes operative" as distinct, if there is any distinction, from the date on which such notice is given. In Sub-clause (*d*), "completion of the work" should read "actual completion" as distinct from completion as defined by Interpretation of Terms Clause No. 6. The very limited power given to the employer to sell the plant of the contractor if not removed by him within a reasonable time after receipt of a notice to remove the same, is particularly vague, and an employer would act at a very serious risk in exercising this power. A definite period should be inserted instead of the phrase "a reasonable time."

(2).—*The right of the employer or the contractor to suspend the work for special reasons and the rights of the parties upon such suspension.*

This matter is dealt with by Sub-clauses (*a*), (*e*) and (*f*). Sub-clause (*a*) provides that the contractor shall suspend whenever he receives an instruction in writing from the employer or the architect to do so, but such suspension shall be subject to the provisions of Clauses 27 and 28, which have already been referred to, dealing with delays and covering in the works during suspension. Sub-clauses (*e*) and (*f*) refer to Sub-clause (*b*) of Clause 27, and have already been commented upon under the notes to that Clause.

(3).—*The summary termination of the contract in case of insolvency of either the employer or the contractor and the respective rights of the parties upon such termination.*

This matter is dealt with under Sub-clauses (*g*) to (*l*), and it is very interesting to find that the Federation has made an attempt to regulate the rights of the parties to the contract on the insolvency of either of them, instead of leaving the matter untouched to be dealt with under the Bankruptcy Laws, as done in the R.I.B.A. form. How far the provisions of the Code in this respect will have legal sanction in the event of actual bankruptcy or compulsory winding up is in serious doubt, as will be explained hereafter. Broadly, the provisions are :—

(*a*)—In the event of an act of bankruptcy by the contractor the employer may :—(i) summarily terminate the contract without compensation to the contractor, and (ii) take possession of the works and complete as provided by Sub-clause (*d*) for the event of failure by the contractor to proceed with the works, but, as has been explained above, this gives no lien upon or property in the plant and materials of the contractor.

(*b*)—In the event of an act of bankruptcy by the employer, the contractor may :—(i) summarily terminate the contract without compensation to the employer, and (ii) take possession of the land, buildings and premises the subject of the contract until all his claims (including anticipated profit on the uncompleted work) have been met and become legally possessed of the same on the repayment by him of any sums received on account of the works less any prior charges upon the said property.

It is true that in both cases the contract purports to give the trustee in bankruptcy, &c., certain specified rights to adopt the contract by notice, in the case of the contractor's bankruptcy, within 31 days of the appointment of the trustee, and in the case of the employer's bankruptcy, within 10 days of the notice of termination of the contract, but the provisions generally are probably invalid as being an attempt to defeat the rights of the trustee for the creditors in general of the bankrupt. The law is by no means settled on this subject, but there is little doubt that the provision which gives the contractor the right to the possession of the lands, &c., of the employer in the event of his bankruptcy is a provision purporting to give the contractor a power to control the user, after bankruptcy, of property vested in the bankrupt at the date of bankruptcy, and as such is invalid as a "controlling" of the property of the bankrupt (Ex parte Barter in *re* Walker, 51 *Law Times*, 811). Moreover, the termination of the contract itself on bankruptcy may be void against the right of the trustee to elect to complete the contract which he has under the Bankruptcy Act, because while the Code makes certain provisions for the trustee to have this right, the conditions under which he may exercise them are not the same as those provided by the Act. Under the Act, the contracts of the bankrupt, except in certain protected transactions, are vested in the trustee of the bankrupt, and the trustee has a right to disclaim any unexecuted contract that in his opinion would not be beneficial to the estate within 12 months of his appointment or within 28 days (or such extended time as the Court may allow) from the receipt of a written notice requiring him to make his decision from a person interested in the contract

It will be seen how different are the conditions under the Code from those under the Bankruptcy Act, and, although there is no express judicial decision on this latter point, the following *dictum* approved by the Court of Appeal in the above quoted case appears to throw some serious doubt upon the validity of the Code provisions :—"The general distinction seems to be that the owner of property may, on alienation, qualify the interests of his alienee by a condition to take effect on bankruptcy, but cannot, by contract or otherwise, qualify his own interest by a like condition, determining it or controlling it, in the event of his own bankruptcy, to the disappointment or delay of his creditors."

Another observation which must be made on these Sub-clauses is that, while the insolvency of the contractor does not entitle the employer to hold the plant of the contractor until his claims have been met, but only to use it during the completion of the work as provided by Sub-clause (*d*), the insolvency of the employer, on the other hand, purports to entitle the contractor to hold the lands, buildings and premises of the employer until his claims have been met and to have the same conveyed to him if he should pay the sums already received on account of the works. Now the insolvency of a contractor appears to be equally detrimental to the employer as that of the employer to the contractor, because it means that the employer will have to expend additional money on the works of as great an amount, if not greater, than the money which, at the time of the employer's insolvency would be properly owing to the contractor. It seems that an ideal building contract would endeavour to give to both employer and contractor the completest security against the failure of either party to carry out their obligations, but in any case we see no reason why the creditors of the one should be dealt with more favourably than the creditors of the other. A curious omission from these provisions is to be noted in the absence of reference to the disposal of retention money in the event of the termination of the contract under this Clause. By Clause 34, retention money is to be deposited by the employer, as it accrues, in a bank in the joint names of the employer and the contractor. The interest accruing on such money is declared to be the property of the contractor and would presumably remain so in any event, but an interesting situation would arise in the event of the bankruptcy of either party as to the property in the corpus of such money, and one would have expected to find the rights of the parties in this connection specifically laid down.

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(To be continued.)

The Trades' Training Schools.

The Annual Report of the Trades' Training Schools of the Worshipful Company of Carpenters and the Associated Companies of Joiners, Glaziers, Painter Stainers, Tylers and Bricklayers and Wheelwrights for the Session 1918–1919, indicates the useful work which is carried out by these Schools under the directorship of Sir Banister Fletcher, F.R.I.B.A. The report includes illustrations of some of the specimens of craftsmanship in the various classes, and shows a high standard of work, on which the various instructors are to be congratulated. It contains the speeches delivered on the occasion of the distribution of prizes, and we may specially refer to the address of the Director of the Schools, who said, "It is an extremely gratifying fact that, notwithstanding that it was the fourth session held during the war, and despite the enormous drain on our manhood, the Schools are still 'going strong.'" The Session was a very successful one, the average attendance comparing very favourably with the pre-war average.

HOUSING AND TOWN-PLANNING NOTES.

Leicester Town-planning Scheme.

At an inquiry held at Leicester by the Ministry of Health into the application of the Leicester Corporation for approval of its town-planning scheme, the Town Clerk said that the Corporation proposed to include portions of the Blaby, Barrow and Billesdon Rural Districts, and parts of the Thurmaston, Oadby and Wigston Urban Districts, 8,500 acres in all, which, with the present 4,000 odd acres comprised within the city boundaries, would make a total area of about 12,900 acres. In all the districts involved, while the land at present was largely agricultural, development schemes were already in existence, and if development was to take place it was absolutely essential that it should be upon lines that would harmonise with the adjacent built-in districts of the city. Only in that way could a repetition of the mistakes of the past be avoided. The City Surveyor said that a feature of the scheme was a circular road 120 ft. wide, which would pass through the districts outside the city boundary.

Mr. Finnemore, in opposing the application, said the County Council suggested an alternative scheme of a much more limited character, but which would meet the needs of Leicester's town-planning requirements for the next thirty years, allowing for an increase in the population of 60,000 during that period.

The inquiry was closed.

Labour and the Housing Question.

The Ministry of Health announces that as a result of the recent conference of the Parliamentary Committee of the Trade Union Congress on the housing question, which was addressed by Dr. Addison, the representatives of the building trade unions have appointed a small committee with a view to considering means of meeting difficulties in the supply of labour, and rendering regular assistance to the Ministry of Health in securing the co-operation of labour in the carrying out of the housing schemes. The members of the Committee as at present constituted are:—Mr. G. Hicks, President, National Federation of Building Trade Operatives; Mr. W. Bradshaw, Secretary, National Federation of Building Trade Operatives; Mr. H. Strong, National Builders' Labourers and Constructional Workers' Society; and Mr. F. Wolstencroft, National Society of Carpenters and Joiners.

The first meeting was held at the Ministry of Health on Saturday, April 10. The Committee will consider certain suggestions made by Dr. Addison to the Parliamentary Committee of the Trades Union Congress, together with alternative or additional proposals, but it is not intended that the Committee should in any way conflict with or undertake the functions of the Joint Industrial Council of the Building Trade.

The Progress of Housing Schemes.

In reply to a question in the House of Commons last week, Dr. Addison said that 1,346 houses and flats were completed on April 1 last, with the exception in some cases of painting. In addition, 12,138 houses were in various stages of construction. Tenders had been approved for 92,000 houses and contracts signed for the erection of 40,292. The plans of 164,157 houses had been approved. So far as matters over which he had any control were concerned, he was satisfied that all was being done to erect as many houses as possible during the year.

Housing Accounts.

The Ministry of Health has issued the Housing Accounts Order (Local Authorities), 1920, in pamphlet form (H.M. Stationery Office, price 3d. net). The Order prescribes the books and accounts which are to be kept by a local authority with respect to an assisted housing scheme, and sets out the duties of the officers concerned. It requires that accounts shall be kept on the basis of income and expenditure, to the extent of including items falling due for receipt or payment within or at the close of the financial period. The Minister retains power to assent to departures from the requirements of the Order in any case where this course appears to be necessary. Separate accounts are required to be kept for assisted housing schemes. The Order is drawn up so as to provide for all the books and accounts which may be necessary in connection with the requirements of the Regulations, but in the majority of cases, particularly of the small authorities, the circumstances will enable many of these accounts to be dispensed with.

WEEKLY HOUSING RETURN.

During the fortnight ended April 10, tenders were submitted to the Ministry of Health for 5,709 houses. Tenders for 5,504 were approved, bringing the total number of houses in tenders submitted to 102,205 and in tenders approved to 92,080. By the end of March, plans had been approved by local authorities for 3,841 houses which will qualify for the grant offered by the Government to private persons building houses this year. The total grant authorised for the 3,841 houses is £596,023, an average of £155 per house. The number of these houses in the Metropolitan Police District will be 1,480, of which 257 are to be built at Wembley, 230 at Hendon, 218 in the London County Council area, and 175 at Croydon. Other active districts are Seaton Delaval, Northumberland (143 houses) and Birmingham (126 houses). Details of local authorities' schemes dealt with during the fortnight are as follows:—

Building Sites.

Schemes Submitted.—The number of schemes submitted was 187, bringing the total to 9,403 (62,000 acres). The larger schemes are given below:—

URBAN.	ACRES.
Lewisham	53.00
Shakerley (3 sites)	27.77
Enfield	19.40
Nottingham	14.64
Loughborough (3)	10.10
RURAL.	ACRES.
Martley (38 sites)	51.33
South Stoneham	13.25
Carmarthen (5)	10.87

Schemes Approved.—The number of schemes was 165, bringing the total to 5,552 (about 44,500 acres). The larger schemes newly approved are as follows:—

URBAN.	ACRES.
Walthamstow	67.00
Tottenham	45.00
Romford	27.96
Enfield (3 sites)	22.76
Milford Haven (2)	18.12
Pontypridd (2)	17.71
Knaresborough	15.00
Richmond	14.88
Dawley (2)	13.69
Coventry	10.38
Conway	10.00
RURAL.	ACRES.
Ashby-de-la-Zouch (6 sites) ..	17.26
Epsom	11.75
Durham	10.25
Chipping Sodbury	10.00
Hitchen (4)	10.00

Lay-Outs.

Schemes Submitted.—One hundred and seventeen schemes were submitted by 69 local authorities, bringing the total number to 3,486. The new schemes are as follows:—

URBAN.—Alfreton, Altrincham, Arnold, Bacup, Barnstaple, Beckenham, Bolton-upon-Dearne, Bradford, Buckhurst-hill, Chesterfield, Darton, Diss, Enfield, Eton, Glemsford, Greenwich, Poole, Maldon, Mansfield, Raunds, Reading, Sandwich, Sheerness, Skelmersdale, Wellington, Woodbridge.

RURAL.—Abingdon, Bedford, Beverley, Boston, Bourne, Buckingham, Bucklow, Chelmsford, Chester, Clitheroe, Daventry, E. Grinstead, Easthampstead, Ely, Erpingham, Eton, Hambledon, Henstead, Hitchin, Hoo, Llangollen, Lymington, Marshland, Melford, Midhurst, Morpeth, Penybont, Plomesgate, Queensbury, Romsey, Sculcoates, Settle, Sleaford, Southam, Tadcaster, Tendring, Uckfield, Valley, W. Lancashire, Woodbridge, Wrexham. COUNTY COUNCILS.—E. Sussex, Southampton.

Schemes Approved.—The following schemes were approved, bringing the total to 2,888.

URBAN.—Altrincham, Barnsley, Barnstaple, Blaydon, Bradford, Chorley, Ellesmere Port and Whitby, Fareham, Glemsford, Glossop, Haslemere, Lynn, Macclesfield, Malpas, Newport, Ulverston, Woodbridge.

RURAL.—Abingdon, Barnet, Bedford, Beverley, Boston, Bourne, Branston, Buckingham, Chester, Chelmsford, Chorley, Clitheroe, Culmstock, Ely, Farnham, Godstone, Grantham, Hambledon, Henstead, Hitchin, Hoo, Malling, Marshland, Midhurst, Sevenoaks, Skipton, Sleaford, Southam, Spilsby, Stanstead, Steyning E., Tendring, Thedwastre, Westhampnett, Woodbridge. COUNTY COUNCIL.—Southampton.

House Plans.

Schemes Submitted.—Schemes representing 4,121 houses were submitted. The total number of schemes submitted now represents 172,291 houses. The new schemes are as follows:—

URBAN.—Alfreton, 104 houses; Arnold, 6; Barnsley, 283; Bedwas and Machen, 76; Bishops Stortford, 10; Bognor, 86; Bolton-upon-Dearne, 338; Bradford, 52; Brighouse, 8; Buckhurst-hill, 24; Caerphilly, 100; Chesterfield, 6; Chorley, 53; Criccieth, 24; Diss, 40; Earsdon, 226; Esher and the Dittons, 16; Folkestone, 12; Gillingham, 72; Glemsford, 10; Greenwich, 18; Guildford, 8; Hoole, 102; Llandrindod Wells, 26; Llanelly, 96; Maldon, 40; Mansfield, 7; Marlborough, 16; Margate 20; Milford Haven, 50; Newark, 500; Peterborough, 64; Portslade-by-Sea, 62; Rickmansworth, 52; Sandwich, 99; Scarborough, 42; Sheerness, 20; Stafford, 74; Stroud, 16; Teddington, 124; Tenterden, 16; Wembley, 38.

RURAL.—Abingdon, 6 houses; Axbridge, 14; Banbury, 8; Basingstoke, 34; Bedford, 8; Berkhampstead, 10; Beverley, 2; Bucklow, 16; Chelmsford, 30; Clitheroe, 22; Cookham, 12; Crick, 8; Culmstock, 8; Driffield, 4; East Grinstead, 103; Eaton Bray, 12; Eaton Socon, 8; Ely, 4; Ely, 2; Erpingham, 4; Eton, 24; Hambledon, 12; Hayfield, 42; Henstead, 12; Hitchin, 18; Hoo, 68; Kiveton Park, 86; Lymington, 24; Malpas, 4; Marlborough, 2; Marshland, 12; Melford, 8; Midhurst, 6; Morpeth, 150; Newbury, 8; Newport Pagnell, 4; Plomesgate, 6; Romsey, 20; Settle, 2; Southam, 97; St. Neots, 12; Stokesley, 84; Stratton, 22; Tendring, 12; Uckfield, 4; Ware, 20. COUNTY COUNCILS.—E. Sussex, 2; Huntingdon, 2; Southampton, 5.

Schemes Approved.—Schemes representing 2,142 houses were approved; the total number now approved represents 159,993 houses.

URBAN.—Barnsley, 283 houses; Bradford, 52; Brighouse, 8; Chorley, 53; Ellesmere Port and Whitby, 10; Fareham, 20; Felixstowe, 14; Gillingham, 72; Glemsford, 10; Glossop, 44; Guildford, 8; Hammersmith, 62; Haslemere, 2; Ipswich, 30; Lydd, 6; Margate, 20; Marlborough, 16; Newark, 500; Newport, 66; Peterborough, 64; Poplar, 15; Portslade-by-Sea, 62; Shepton Mallet, 6; Stafford, 74; Standish-with-Langtree, 57; Tenterden, 16; Wardle, 106; Westhampnett, 24.

RURAL.—Abingdon, 8 houses; Axbridge, 14; Barnett, 16; Bedford, 8; Berkhampstead, 12; Biggleswade, 8; Buckingham, 10; Chelmsford, 30; Chester, 54; Crediton, 16; Culmstock, 8; Eaton Bray, 12; Ely, 2; Escrick, 6; Farnham, 46; Godstone, 24; Hambledon, 12; Hemsworth, 134; Henley, 4; Henstead, 12; Hitchin, 6; Hoo, 68; Hungerford, 40; Malling, 8; Malpas, 4; Marlborough, 2; Marshland, 12; Midhurst, 50; Ogwen, 18; Sevenoaks, 12; Southam, 97; Stanstead, 30; Steyning East, 6; Tendring, 16; Thedwastre, 4; West Lancashire, 8; Clitheroe, 22. COUNTY COUNCIL.—Southampton, 3.

THE BUILDING TRADE.

"HONOURING THE CHEQUE."

By Colonel G. H. Trollope, V.D., D.L.

When the call came for the manhood of England to leave their homes and meet the greatest peril which has ever menaced their country, they were content to leave the care of their wives and families to the country they were giving up so much to serve. The time has now come for us to honour our obligation to these gallant men, many of whom have fallen, and some of whom have returned crippled in body or finances—or in both—to re-commence the life which was so rudely interrupted. The Government has done something, but not enough; nor, with the immense financial obligations under which it labours as a result of the war, is it possible for it to do more. The rank and file have been more adequately provided for than the officers, and our first duty, therefore, is to the latter.

The following figures show the immensity of the task before us. Insufficient or no provision exists for 33,000 officers, 10,000 officers' widows, 8,000 orphans, 15,000 children, and 25,000 unemployed officers.

Can we who stayed at home, and who owe the very existence of our businesses to these men, deny them any help it is in our power to give? A great opportunity has come to the more prosperous of the great industries of the country to help their less fortunate comrades back to the positions which they occupied before they gave up all to fight and defeat the common enemy, and to maintain intact the integrity of these great industries.

Our three great fighting leaders, Field-Marshal Earl Haig, Admiral of the Fleet Earl Beatty, and Air-Marshal Sir Hugh Trenchard, are issuing an appeal for £5,000,000 to discharge the debt the country owes to the men who under their guidance fought for and obtained its salvation; and in issuing their appeal they have asked each great industry to organise its own members to this end. The organisation of the building industry has been placed in my hands, and I do most earnestly appeal to all the builders and public works and engineering contractors of London and the suburbs to give me all the support they can in this great cause. I feel sure that the case has only to be put before the building trade for a ready and generous response to be made. The money is to be devoted to supplementing Government pensions where such are inadequate; to aid the wives and to assist in maintaining and educating the children of officers killed in the war; to assist officers who are totally or partially disabled and their families, and all those who are otherwise prevented from earning their living; and to assist other officers in distress, and help them to find employment.

I would ask that donations be sent to me at 77, Grosvenor-road, Westminster; or at West Halkin-street, Belgrave-square, S.W.1.

A Contractor's Estate.

The late Sir John Jackson, C.V.O., LL.D., F.R.S., head of Sir John Jackson, Ltd., who died on December 14, aged 68, left property now valued for probate at £520,474, with net personalty £504,674.

LABOUR PROBLEMS IN THE BUILDING INDUSTRY.

A conference was held at Olympia on Monday last, under the auspices of the Society of Architects, to discuss the labour problems in the building industry. The chair was occupied by Sir Charles Ruthen, O.B.E. (Vice-President of the Society).

The Chairman, in opening the discussion, said that many of the difficulties which at present existed arose through misunderstandings between architects, builders, and operatives, and he suggested that these difficulties could largely be cleared away if a conference were convened where the parties interested could fully discuss the problems and arrive at some decision which might aid in the matter.

Mr. J. F. Lloyd (President of the London District Council of the National Federation of Building Trades' Operatives) said that in his opinion the Government was largely responsible for the present housing shortage in not seeking the advice of the right men when the position became acute in the second year of the war. Instead of seeking the co-operation of experienced men, amateurs were called in and the Government was even now availing itself of the services of these amateurs. The result was a state of chaos, which the operatives would have to do something to remedy; it might even be necessary for them to call a halt throughout the whole industry and speak frankly to the Government. The operatives were aware that the six years of delay in the building industry could not be made up in a short space of time, and that the extensive repair work which was necessary could not be done at the moment, but during the period of the war the industry had lost nearly a quarter-of-a-million of its operatives, and in the London area alone they were 25,000 operatives short, as compared with 1914. That fact alone largely accounted for the shortage of labour, but there was also the fact that the industry had not been recruiting new members. At the present time there were not only too few men for the housing schemes, but there were also not enough to go on with the ordinary repair and maintenance work. The operatives were continually being asked to stimulate house building, and they replied that they would be willing to help in this direction if luxury building were stopped; but when it came to the question as to what was luxury building and what was work of utility they would be in a quandary. There were buildings in course of erection which might be stopped for the moment, and if the men were assured that they would be found work on jobs of real utility, the Operatives' Federation would be willing to assist in calling the men off luxury building.

Dr. Addison had said that if houses were not built the country might be faced with a revolution; but if it came to be merely a question of building houses without inquiring as to what the houses were to be like, the operatives would have something to say. They felt that the working classes should have something to say about the houses they were going to live in, and they might refuse to build some of the houses which had been passed by the Ministry of Health. The Ministry said that economy must be regarded in the building of houses; the working-classes agreed that economy must be exercised, but there was no economy without efficiency, and if efficiency was going to be sacrificed for economy the men would take no part in it. The working-classes had very different ideas as to what a home should be than they had a few years ago, and when they were asked to live in rooms smaller than the old rooms they had a right to object. The houses now being built with rooms 8 ft. by 9 ft. and 8 ft. high could scarcely be called places fit for heroes to live in. Some of the plans provided for 3 in. partitions and ½ in. door-jambs, and in many instances work was being passed which was not in the interests of the people who were to live in the houses or of the architectural profession. The architects ought to protest against it, but if it were left to the operatives to protest they would do so in the only way in their power and that was by refusing to assist in the erection of such houses. In many cases the new houses would merely perpetuate slumdom, and some of the houses in course of erection in a town in the midlands were worse than the back-to-back dwellings they were replacing. If they were the kind of houses the operatives were asked to sacrifice luxury building for, the operatives would refuse to do it.

Another matter which the operatives were much concerned about was profiteering. When they approached the employers for increased wages they were told how much they were getting already, and so on, but the workmen's wages did not account for the present high cost of building. Dr. Addison had said that the high cost of building materials was largely justified. That meant that the capitalists were justified in raising the price of materials by 300 or 400 per cent., but the operatives' wages had only increased by about 100 per cent. whilst the cost of living had increased by about 150 per cent. The operatives did not feel so happy when they saw that the capitalists were allowed to profiteer in this manner whilst they were denied the pre-war rates of wages according to the present price of commodities. They did not feel inclined to leave luxury building, where they knew they were doing useful work, to go on to housing work where they knew that in many cases they would be doing useless work, and they were also not inclined to put their backs into the work while they had the impression that they were the only class who were being asked to sacrifice something and that those who supplied the materials were making fortunes. The men felt that they had not been fairly treated, especially in that the Government had never taken them into its confidence in regard to the problems of building. The Federation had always been willing to co-operate with anyone who sought its advice, as for instance, in the formation of the Building Industries' Consultative Board some twelve months ago, but up to the present the Government has not asked for the advice of the Board.

Mr. Edwin J. Sadgrove (President of the Society of Architects) said that the question of larger rooms in the new working-class houses had not been seriously put forward before. Architects wanted the assistance of the operatives and wanted to work pleasantly with them; but, at the same time, architects wanted to live, and the large number of practising architects could not exist on the building of cottages. With regard to the high cost of materials, if wages were to be continually increased, prices must keep pace with those increases; it was the vicious circle, and the question was—where were we going to stop? The maintenance of existing property could not be considered as a luxury—what was already in existence must be kept in repair. The Regulations in respect of luxury building might be restricted by the Advisory Committees which were to be set up in various areas. These Committees were to consist of the local authorities, architects, builders and operatives, and they might have some influence in checking building which was unnecessary and helping along work which was necessary.

Mr. Marlowe Reade said he thought that, if the operatives could be satisfied that the policy of housing was the right one, they would put their backs into their work; it was very discouraging to feel that the men were hanging back now through misunderstandings

The Tudor Walters' Committee consulted every conceivable kind of person in preparing its Report, and that Report was now looked upon as the standard for housing by the municipalities. The suggestions of the Committee were for a real home, and provided that the floor area of the living room should be at least 165 ft. super., but that standard had, in some cases, been lowered by municipalities. He had come to the conclusion that, from a health point of view, rooms 8 ft. high were more comfortable and could be more easily warmed and ventilated than rooms 9 ft. 6 in. high. With regard to the price of materials, there was an arrangement by which housing schemes were supplied on a lower basis than other classes of work; under this arrangement, the builders' merchant was only allowed a margin of 7½ per cent. for most materials and 5½ per cent. for others, and a builders' merchant could not carry on with a less margin than 18 per cent. for establishment charges. As showing the increased cost due to wages, he mentioned that in one brickfield the cost for labour only in the production of 1,000 bricks before the war was 10s. 5d., whereas it was now 34s. 2d. per 1,000. The wages did not matter so much if the output was commensurate; five years more of the munition spirit amongst the workers would relieve the whole situation.

Mr. J. Murray (Secretary of the National Federation of Building Trades' Operatives) said that it was a fallacy to think that the operatives were bound by trade union regulations to keep down output. The average workman wanted to know who would benefit by the increased production. The operative saw around him evidences of wealth and prosperity and yet he was himself in a worse position than at any time in his history in regard to wages. It was thought that output would be increased by adopting profit-sharing, piece-work or bonus schemes, but the operatives would have no more of that. Nothing was more degrading in the history of the building industry than the piece-work systems which had been introduced in the past. To give the best output, the men must not be working for a bare existence, but must have a direct interest in their work. There was a feeling that the men were going to take the question of building construction into their own hands by the introduction of the Guild system, and this was already being tried at Manchester. The Guild system was the kernel of the whole thing; let the men under democratic machinery have a control in the management and a direct incentive to get on with the work and thereby give their services to the community and not for private profit, and they would give the best results. When considering questions of increased output, the operatives always remembered the long spells of unemployment they had been subject to in the past.

Mr. Stennett (National Federation of Building Trades' Operatives) said they believed that all luxury building would have to stop if the housing schemes were to be proceeded with. That the housing shortage was not the fault of the operatives was shown by the fact that not many years ago, when houses were wanted, his organisation paid £112,000 in unemployment pay in one year. They would not allow themselves to be put back in their old position where they had long spells of unemployment. It might be necessary in the near future further to reduce the hours of labour, and if the industry became slack the hours must be reduced to such an extent as to eliminate unemployment.

Sir Charles Ruthen, in concluding the Conference, pointed out that if all so-called "luxury" building were done away with a large number of skilled craftsmen at present engaged on such work would have to be transferred to housing work, where their skill would be wasted.

Demolition of a City Church.

The parishioners of St. Katherine Coleman, Fenchurch-street, are considering a scheme, propounded by the Bishop of London, for the demolition of the church and the amalgamation of the living with that of St. Olave, Hart-street.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
Aberdare	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Accrington	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½–1/6½	
Altrincham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Ashton-under-Lyne	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Barnsley	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Barrow-in-Furness	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Barry	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Bath	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Bedford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Birkenhead	2/–½	2/–½	2/–½	2/–½	2/–½	2/–½	2/–½	1/4½	1/4½	1/4½
Birmingham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Bishop Auckland	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Blackburn	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½–1/6½	
Blackpool	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/6½–1/6½	
Bolton	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Bournemouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2½	1/2½	1/2½
Bradford	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Bridgwater	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Brighton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Bristol	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Burnley	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½–1/6½	
Burton-on-Trent	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Bury	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Cambridge	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Cardiff	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Chatham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/1½	1/1½	1/1½
Cheltenham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Chester	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½ -1/6½	
Chesterfield	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Colchester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Coventry	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Crewe	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½–1/3½	
Darlington	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Derby	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Doncaster	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Durham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
East Glam. and Mon. Valleys	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Exeter	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Folkestone	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Gloucester	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½	1/5½	1/5½
Grantham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Grays	1/11½	1/11½	1/11½	1/11½	1/11½	2/–½	1/10½	1/8½	1/8½	1/8½
Grimsby	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Great Yarmouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Guildford	1/6½	1/6½	1/6½	1/6½	1/6½	1/7½	1/5½	1/3½	1/3½	1/3½
Halifax	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Harrogate	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Hartlepools	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Hastings	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Hereford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½	1/5½	1/5½
Huddersfield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Hull	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Ipswich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Lancaster	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½–1/6½	
Leamington Spa	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Leeds	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Leicester	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Lincoln	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Liverpool	2/–½	2/–½	2/–½	2/–½	2/–½	2/–½	2/–½	1/8½	1/8½	1/8½
Llanelly	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
London	1/11½	1/11½	1/11½	1/11½	—	2/0½	1/10½	1/8½	1/8½	1/8½
Loughborough	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Luton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½	1/5½	1/5½
Maidstone	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Manchester	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Mansfield	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Merthyr Tydfil	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Middlesbrough	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Newcastle-on-Tyne	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Newport, Mon.	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Northampton	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Norwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Nottingham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Oldham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/2½	1/2½	1/2½
Plymouth	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Pontypridd	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Portsmouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½	1/2½	1/2½
Preston	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½–1/6½	
Reading	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Rochdale	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Rochester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Rugby	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
St. Albans	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/3½	1/3½	1/3½
St. Helen's	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Scarborough	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Sheffield	1/11½	1/11½	1/11½	1/11½	1/9½	2/–½	1/8½	1/8½	1/8½	1/8½
Shrewsbury	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Southampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½	1/2½	1/2½
Southend-on-Sea	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/5½	1/5½	1/5½
Southport	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5½–1/6½	
South Shields	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Stockport	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
stockton-on-Tees	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Stoke-on-Trent	1/8½	1/8½	1/8½	1/8½	1/8½	1/9½	1/8½	1/5½	1/5½	1/5½
Stroud	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½	1/5½	1/5½
Sunderland	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Swansea	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Taunton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Torquay	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Wakefield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Walsall	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Warrington	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
West Bromwich	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Wigan	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½	
Windsor	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Wolverhampton	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Worcester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
York	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½

The Masons' rate given is for bankers: fixers usually 1d. per hour extra. * War bonus of 2s. per week granted † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 4s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include the 12½ per cent. bonus. (The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—Ed.]

COMPETITIONS, CONTRACTS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv; Competitions iv; Public Appointments lxxviii; Sales by Auction xciii. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowances will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where, quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

APRIL 23.—**Hurlingham.**—STANDS.—Erection of temporary or permanent stands to accommodate 20,000 spectators, for the Committee. Lt.-Col. A. A. Duff, manager, Hurlingham Club, Fulham, S.W.

APRIL 23.—**London.**—ENGINE HOUSE, &c.—Erection of engine house, cottage, &c., at Shooters'-hill, for the Metropolitan Water Board. Chief Engineer's Dept., South-place, Finsbury-pavement, E.C. Deposit, £5.

APRIL 23.—**Yiewsley.**—HOUSES.—Erection of 400 for the U.D.C. Mr. J. Lewis, Council's Engineer and Surveyor.

APRIL 24.—**Abersychan.**—HOUSES.—Erection of 248 houses (three sections) for the U.D.C. Messrs. Kenshole & Beven, architects, Bargoed. Deposit £5 5s.

APRIL 24.—**Bedford.**—HOUSES.—Erection of six houses at Great Barford and six at Wootton for the R.D.C. Council offices, 115, High-street, Bedford (for Great Barford houses) and Mr. K. Gammell, architect, 17, St. Peters, Bedford (for Wootton houses).

APRIL 24.—**Brampton.**—HOUSING.—Erection of six houses at Holymoorside for the U.D.C. Mr. B. Deeping, architect, Glumen Gate, Chesterfield.

APRIL 24.—**Horsham.**—HOUSES.—(1) Contract No. 15, two pairs; (2) Contract No. 18, four pairs; (3) Contract No. 19, four pairs. Mr. W. R. Guilford, Surveyor to the Council, Albion-terrace, Horsham.

APRIL 24.—**Leeds.**—PAINTING.—For painting Kingston Unity Club. Mr. F. Hawkins, Secretary, Club, Union-street, Leeds.

APRIL 24.—**London.**—Repairs and painting and other works, at the Infirmary, Rackham-street, Notting-hill, for the Guardians of the Poor of the parish of St. Marylebone. Steward of the Infirmary.

APRIL 24.—**St. Ercs.**—SCHOOL.—Erection of national school buildings at St. Ercs, County Kerry. Secretary, Office of Public Works, Dublin.

APRIL 24.—**Stafford.**—INSTITUTE.—Erection of a county mining institute, at Ford Green, Smallthorne, for the E.C. Director of Education, County Education Offices, Stafford.

APRIL 24.—**Swinton.**—HOUSES.—For erection of 64 houses on Light Bourne Green Estate, and 166 houses on the Temple Lodge Estate, for the U.D.C. Mr. F. Knight, architect, 5, Cross-street, Mancheeter.

APRIL 24.—**Wortley.**—HOUSES.—Erection of 112 houses at Ecclesfield for the R.D.C. Mr. Wynyard Dixon, architect, Hartshead, Sheffield. Deposit £2 2s.

APRIL 26.—**Conway.**—PAINTING.—For painting the suspension bridge, for the T.C. Mr. F. A. Delamotte, Borough Engineer, Conway. Deposit £1 1s.

APRIL 26.—**Croydon.**—HOUSES.—Erection of 92 houses for the T.C. Borough Engineer, Town Hall, Croydon. Deposit £5 for each section (four).

APRIL 26.—**Cumnor.**—WALL.—Erection of wall at Church churchyard. The Vicar, Cumnor.

APRIL 26.—**Dalkeith.**—HOUSES.—Construction of 40 houses, for the T.C. Mr. A. Murray Hardie, architect 20, George-street, Edinburgh.

APRIL 26.—**Gravesend.**—PAINTING AND EXTENSION.—For (1) Re-decoration at Police station; and (2) extension of room at electricity works, for the T.C. Borough Surveyor, Gravesend.

APRIL 26.—**Inverness.**—REPAIRS.—For repairs to eight schools in the Island of Skye, for the Inverness C.C. Mr. H. Mackechnie, Clerk of Works, Inverness.

APRIL 26.—**Ipswich.**—ADDITIONS.—Alterations and additions to premises in Burrell-road, for the Framlingham and Eastern Counties Co-operative Egg and Fowl Society. Mr. H. J. Wright, architect, 6, Providence-street, Ipswich.

APRIL 26.—**London.**—Flooring and reflooring to pipe ducts in the wards at their Workhouse, Northumberland-street, W., for the Guardians of the parish of St. Marylebone. Mr. A. Saxon Snell, architect, 9, Bentinck-street, W. 1.

APRIL 26.—**Preston.**—PAINTING.—For painting at Whittingham Asylum, for the Committee of Visitors. Mr. H. E. Morgan, Clerk at the Asylum.

APRIL 26.—**Surbiton.**—HOUSES.—Erection of 50 at Surbiton-hill for the U.D.C. Council Offices, Surbiton.

APRIL 26.—**Wem.**—HOUSES.—Erection of houses, in various parishes for the R.D.C. Mr. A.G. Eccleston, clerk, 30, Noble-street, Wem, Salop. Deposit £1 1s.

APRIL 27.—**Ashbourne.**—HOUSES.—Erection of 45 houses, for the U.D.C. Mr. P. B. Houghton, architect, Furnival Chambers, Chesterfield. Deposit 10s.

APRIL 27.—**Glasgow.**—TRAMWAY DEPOT.—Various trades in erection of depot at Park Head, for the Tramways Department. Mr. J. Dalrymple, General Manager 46, Bath-road, Glasgow.

APRIL 27.—**Hants.**—COTTAGES.—Erection of 7 pairs at Titchfield Farm Settlement for the Commissioners of His Majesty's Works. Director of the Farm Settlement, Abbey Cottage, Titchfield, or of H.M. Office of Works, Storey's Gate, Westminster, S.W.1.

APRIL 27.—**Ipswich.**—REPAIRS, &c.—For works and repairs, &c., at Ipswich Barracks, for the War Department. The Officer Commanding Royal Engineers, Flagstaff-road, Colchester.

APRIL 27.—**Kirkcaldy.**—HOUSES.—Erection of 46 houses, for the District Committee. Mr. W. Williamson and Mr. S. B. Deas, architects, Kirkcaldy.

APRIL 27.—**Warrington.**—EXTENSION.—For extension of buildings, for the Electricity Committee. Mr. S. P. Silcock, architect, 6, Egypt-street, Warrington. Deposit £1 1s.

APRIL 27.—**Welshpool.**—HOUSES.—Erection of 60 houses. Mr. F. H. Shayler, architect, 9, Gateway Chambers, Shrewsbury. Deposit £1 1s.

APRIL 28.—**Braintree.**—COTTAGES.—Erection of cottages at Stisted (8), Pattiswick (6) and Bradwell (6), for the R.D.C. Mr. A. R. Dannett, architect, Great-square, Braintree. Deposit, £1 1s. each scheme.

APRIL 28.—**Brentford.**—VARIOUS WORKS.—For (1) painting work at Warkworth House and Dundee House, and (2) telephone improvements at Warkworth, and (3) alterations at Infirmary, for the Brentford Board of Guardians. Mr. F. E. Harmsworth, Union Offices Isleworth.

APRIL 28.—**Doncaster.**—RACE COURSE BUILDINGS.—For erection of further accommodation on race course, for the T.C. Mr. R. E. Ford, Surveyor, 3, Priory-place, Doncaster. Deposit £2 2s.

APRIL 28.—**Hull.**—HOUSES.—Erection of 200 houses, for the T.C. Mr. J. H. Hirst, City Architect, Guildhall, Hull. Deposit, £2 2s.

APRIL 28.—**Linthwaite.**—HOUSES.—Erection of 10 houses, for the U.D.C. Mr. J. Ainley, architect, 3, Chapel-hill, Huddersfield.

APRIL 28.—**Margate.**—NURSING HOMES.—Erection of two each for 20 children at the Royal School for Deaf and Dumb Children, Margate. Mr. H. Carter Pegg, architect, 35, Parliament-street, Westminster, S.W.1.

APRIL 28.—**Newport Pagnell.**—HOUSES.—Erection of 10 for the R.D.C. Mr. W. B. Stonebridge, M.S.A, architect, 26, St. John's-street, Bedford.

APRIL 28.—**Stow-in-the-Wold.**—HOUSES, SEWERS, &c.—Erection of 20 houses at Bourton, eight at Bledington and six at Naunton, and construction of roads and sewers at Bourton, for the R.D.C. Mr. T. Malvern, architect, 21, Wincombe-street, Cheltenham. Deposit, £1 1s.

APRIL 28.—**Valley.**—HOUSES AND ROADS.—Erection of 48 houses in various parishes, for the R.D.C. Messrs. J. Owen & S. Thomas, architects, Exchange Chambers, Holyhead.

APRIL 29.—**Ashford.**—PAINTING.—For painting at the schools, for the Managers of West London School District. Mr. F. G. Beething, Clerk, Ashford, Middlesex.

APRIL 29.—**Greenwich.**—PAINTING, &c.—For painting and repairs at Infirmary, for the Board of Guardians. Mr. L. Jacob, Surveyor, 39, Bloomsbury-square, W.C. Deposit £2.

APRIL 29.—**Lambeth.**—REPAIRS, &c.—For repairs to and painting of greenhouse, sheds, &c., at Lambeth Cemetery. Mr. H. E. Anderson, Borough Engineer, Lambeth Town Hall, Brixton Hill, S.W.

APRIL 29.—**St. Georges in the East.**—PAINTING.—Cleaning and paint works at relief office and dispensary of the Board of Guardians. Mr. R. M. Lochner Clerk, Guardians Office, Raine-street, E.

APRIL 29.—**Stockport.**—HOUSES.—Erection of 32 houses, for the T.C. Mr. W. A. Banks, housing architect, Town Hall, Stockport. Deposit, £1 1s.

APRIL 29.—**Stranraer.**—HOUSES, &c.—For various trades in erection of 10 houses and also sewers and water mains, for the T.C. Mr. J. Torrence, 30 Lochryan-road, Stranraer.

APRIL 29.—**Thornaby-on-Tees.**—HOUSES.—Erection of six blocks of four houses and six pairs of semi-detached houses, for the T.C. Mr. J. Draper, Borough Engineer, Town Hall, Thornaby-on-Tees. Deposit £2 2s.

APRIL 30.—**Alderley Edge.**—COTTAGES.—Erection of 22 cottages, for the U.D.C. Mr. H. Sheldon, Surveyor, Alderley Edge.

APRIL 30.—**Bridgnorth.**—HOUSES.—Erection of 32 houses for the T.C. Borough Surveyor, Bridgnorth.

APRIL 30.—**Castle Eden.**—HOUSES, &c.—Erection of 171 houses and roads and other works in connection therewith for the Horden Colliery. Mr. J. Hamilton, architect, Horden Collieries, Ltd., Castle Eden.

APRIL 30.—**Gellygaer.**—HOUSES.—Erection of 68 houses and construction of roads and sewers at Bargoed, for the U.D.C. Mr. P. G. Williams, architect, Council Offices, Hengoed. Deposit £2 2s. each contract.

APRIL 30.—**Gravesend.**—PAINTING.—Exterior painting of Royal-terrace Pier, for the Estate Co., Ltd. Mr. W. J. Holland, secretary, Royal-terrace Pier Estate Co., Gravesend.

APRIL 30.—**Islington, N.**—Conversion, painting, whitewashing, external and internal at Nos. 65, 67, and 69, Hornsey Rise; and Nos. 1 and 2, Cromartie-road, N., for the Guardians of the Poor. Mr. Edmund J. Harrison, 23, Berkeley-road, Crouch End, N.

APRIL 30.—**Littlehampton.**—HOUSES.—Erection of 66 of various types, together with the drains and fencing, for the U.D.C. Mr. W. A. Clegg, Surveyor to the Council, Town Offices, Littlehampton.

APRIL 30.—**Marlborough.**—COTTAGES.—Erection of 14 in various districts for R.D.C. Mr. J. W. Brooks, Architect, 21, The Green, Marlborough.

APRIL 30.—**Sheffield.**—SUB-STATION.—Erection of transformer sub-station at Neepsend, for the T.C. Mr. S. E. Fedden, general manager, Commercial-street, Sheffield. Deposit £1 1s.

APRIL 30.—**Warrington.**—VARIOUS WORKS.—For concrete foundations for purifiers at Gas Works, painting gas holders, &c., for the T.C. Mr. W. S. Haddock, general manager, Gas Works, Warrington.

MAY 1.—**Campden.**—HOUSES.—Erection of 26 houses and forming road at Moreton-in-Marsh, for the R.D.C. Mr. H. E. Dicks, architect, Evesham.

MAY 1.—**Carlisle.**—ALTERATIONS.—For alterations to Lowther-street schools for the T.C. Mr. H. C. Marks, Surveyor to E.C., 36 Fisher-street, Carlisle. Deposit £1 1s.

MAY 1.—**Epsom.**—REPAIRS, &c.—Repairs, cleaning and painting at the Cuddington Hospital, for the Visiting Committee. Mr. A. L. Williams, architect, Ashley-road, Epsom.

MAY 1.—**Sharborne.**—COTTAGES.—Erection of eight cottages at Yetminster, for the R.D.C. Mr. W. J. Gillingham, architect, Haydon, Sherborne. Deposit, £2 2s.

MAY 2.—**Abergavenny.**—HOUSES.—Erection of 16 houses for the T.C. Mr. W. H. Hopwood, Town Clerk. Abergavenny. Deposit £2 2s.

MAY 2.—**Malling.**—COTTAGES.—Erection of 8 cottages at Aylesford, for the R.D.C. Mr. W. K. McDermott, architect, West Malling, Kent.

MAY 3.—**Bradford.**—PAINTING.—For painting at the City Hospital, for the T.C. City Architect, Town Hall, Bradford.

MAY 3.—**Chester.**—HOUSES.—Erection of 38 houses at Great Langhall, for the R.D.C. Messrs. Lockwood & Abercrombie, architects, Cathedral-chambers, Chester. Deposit, £2 2s.

MAY 3.—**Dubmire.**—PAINTING.—For painting the Workmen's Club and Institute. Mr. G. Bates, Secretary, Station-terrace, Fence Houses, Dubmire.

MAY 3.—**Jedburgh.**—HOUSES.—Erection of 24 houses, for the T.C. Mr. J. P. Abson, architect, Hawick.

MAY 3.—**London.**—PAINTING.—For repainting ten bridges, for the L.C.C. Chief Engineer, County Hall, Spring Gardens, S.W. 1. Deposit £1.

MAY 3.—**Musselburgh.**—Erection of 18 houses, for the T.C. Mr. W. Constable, architect, 3, Hill-street, Edinburgh.

MAY 3.—**Old Fletton.**—HOUSES.—Erection of 36 houses for the U.D.C. Mr. H. W. Hawkins, Surveyor, Old Fletton, Peterborough.

MAY 3.—**St. Helens.**—ERECTIONS AND ADDITIONS.—Erection and completion of additions to Cowley Secondary School for Boys. Messrs. Biram & Fletcher, architects, George-street, St. Helens.

MAY 3.—**Warrington.**—REPAIRS.—For pointing and repairs to boiler chimney at Longford Depot, for the T.C. Mr. R. Wilson, manager, Longford Depot, Warrington.

MAY 3.—**West Hampnett.**—HOUSES.—Erection of 17 in various districts for the R.D.C. Mr. John Dovaston, architect, Pellant House, Chichester.

MAY 3.—**Worsbrough.**—HOUSES, &c.—For erection of 62 houses and carrying out roads and sewers, or alternatively for the erection of 18 houses, for the U.D.C. Mr. A. Whitaker, architect, 18, Bank-street Sheffield. Deposit, £2.

*MAY 4.—**London, W.**—PAINTING, &c.—External painting and decorating to the houses, terraces and enclosures of Carlton House-terrace and Carlton-gardens, for the Crown Estate Paving Commissioners. Mr. Lionel Barrett, Surveyor, 6, Vere-street, W. 1.

MAY 5.—**East Grinstead.**—HOUSES.—Erection of 14 houses at Worth for the R.D.C. Mr. C. Turton, architect, 6 High-street, East Grinstead. Deposit £3 3s.

MAY 5.—**East Stow.**—HOUSES.—Erection of 22 houses at Stow-upland, for the R.D.C. Messrs. Hunt & Coates, architects, 51, Abbeygate-street, Bury St. Edmunds. Deposit, £3 3s.

*MAY 5.—**Hackney, E.**—COTTAGES.—The erection of 80 at Casimir, Cleveleys and Gunton-roads, Hackney, for the Metropolitan Borough. Borough Engineer and Surveyor's Office, Town Hall, Mare-street, Hackney, E. 8.

MAY 5.—**Hawick.**—HOUSES, &c.—(1) Erection of 40 houses; and (2) construction of roads and sewers, for the T.C. Mr. J. R. Purdom, town clerk, Hawick.

MAY 5.—**Lochgelly.**—HOUSES.—Erection of 74 houses, for the T.C. Burgh Surveyor, Town House, Lochgelly. Deposit, £2 2s.

MAY 5.—**Monifieth.**—HOUSES.—Erection of seven blocks of semi-detached cottages, for the T.C. Mr. C. A. Mackenzie, Burgh Surveyor, 16, Maule-street, Monifieth. Deposit, £1 1s.

MAY 6.—**Manchester.**—CHIMNEY, &c.—Erection of boiler chimney and main flue at Gas Works, for the T.C. Mr. W. Newbigging, engineer, 5, Norfolk-street, Manchester. Deposit, £1 1s.

*MAY 6.—**Southwark.**—Erection of an extension to the Nurses' Home at the Southwark Hospital, East Dulwich Grove, S.E. for the Union. Mr. A. Saxon Snell, architect, 9, Bentinck-street, W. 1.

MAY 7.—**Dingwall.**—HOUSES.—Erection of 35 houses, for the T.C. Messrs. Mackenzie & Macdonald, architects, Dingwall.

*MAY 10.—**Bury.**—HOUSES.—Erection and completion of 92 semi-detached houses of four types, for the County Borough. Mr. J. Ainsworth Settle, Borough Engineer and Surveyor, Bank-street, Bury.

MAY 10.—**Cheshire.**—HOUSES, &c.—Erection of houses and street works at Newton (24), Mickle Trafford (2), Dunham Hill (4), Wervin (4), Upton (6), Backford (8), Mollington (4), Fulford (4) and Eccleston (4). Messrs. J. H. Davies & Sons, architects, 14, Newgate-street, Chester. Deposit, £2 2s.

✱MAY 10.—**Fleetwood.**—HOUSES.—Fifty to be erected in brick on the Warren Farm Estate for the U.D.C. Mr. Bertram Drummond, architect, 54 Adelaide-street, Fleetwood.

MAY 10.—**Reigate.**—HOUSES.—Erection of 52 houses for the T.C. Mr. A. Smith, Town Clerk, Reigate. Deposit £2 2s.

✱MAY 10.—**Southampton.**—ALTERATIONS, &c.—Alterations and additions to various buildings, farm houses and cottages for the County Borough. Mr. A. L. Roberts, Architect to the Education Committee The Castle, Winchester.

MAY 10.—**Tilbury.**—HOUSES.—Erection of 1,820 houses for the U.D.C. Mr. S. A. Hill-Willis, engineer, Council offices, 47, Dock-road, Tilbury. Deposit, £10 10s.

✱MAY 10.—**West Ham.**—PAINTING, &c.—Cleaning, painting and repairing various schools, for the County Borough. Mr. J. H. Jacques, Architect to the Education Committee, 2, Fen-court, Fenchurch-street, E.C.3.

✱MAY 11.—**Atherstone.**—COTTAGES.—Erection of 100, in brick, for the R.D.C. Mr. H. J. Coleby, engineer and surveyor, 102, Long-street, Atherstone.

✱MAY 11.—**Hampton.**—HOUSES.—erection of 82 for the U.D.C. Mr. S. H. Chambers, Surveyor, Public Offices, Hampton, Middx.

MAY 12.—**Great Sankey.**—ALTERATIONS, &c.—For alterations and additions to the Council School, for the Lancashire E.C. Mr. H. Littler, County Architect, 16, Ribblesdale-place, Preston.

✱MAY 12.—**Wimborne and Cranborne.**—COTTAGES.—Erection of six pairs for the R.D.C. Messrs. Fletcher & Brett, architects, the Chantry, Wimborne, Dorset.

MAY 13.—**Rotherhithe.**—REPAIRS, &c.—For redecoration and repairs at hospital and relief offices, for the Bermondsey Board of Guardians. Mr. H. B. Reeve, Clerk, 283, Tooley-street, S.E. Deposit £10.

MAY 13.—**Shirley (Croydon).**—REPAIRS.—For repairs to playground and paths at Shirley Schools, for the Bermondsey Board of Guardians. Mr. H. H. Reeve, Clerk, 283, Tooley-street, S.E. Deposit £5.

MAY 20.—**Whitefield.**—HOUSES.—Erection of 42 houses for the U.D.C. Mr. G. M. Denton, Architect, Council Offices, Whitefield. Deposit £2 2s.

NO DATE.—**Epping.**—COTTAGES.—Erection of cottages at North Weald (10), Steering (20), Nettleswell (20), for the R.D.C. Messrs. Tooley & Foster, architects, Buckhurst Hill.

NO DATE.—**Hemsworth.**—HOUSE.—Erection of Parsonage House, Fitzwilliam, near Hemsworth. Messrs. Garside and Pennington, architects Pontefract.

✱NO DATE.—**Northampton.**—Cottages and farm buildings for the C.C. Mr. Arthur P. Ker, County Land Agent, the Moothall, Newcastle-on-Tyne.

NO DATE.—**Northumberland.**—COTTAGES, &c.—For erection of cottages and farm buildings, near Whitley Chapel, for the Northumberland C.C. Mr. A. P. Ker, County Land Agent, Moot Hall, Newcastle-on-Tyne.

NO DATE.—**Stevenston.**—HOUSES.—Erection of 10 double and cottages at Ardeer Iron Works. Specifications at the Iron Works, Stevenston.

NO DATE.—**Tavistock.**—WAR MEMORIAL.—Erection of war memorial in granite or Portland stone. Mr. W. G. M. Wivell, Hon. Sec., Council offices, Tavistock.

FURNITURE, MATERIALS, etc.

APRIL 27.—**Barking.**—TAR MACADAM.—Supply of 5,000 tons of tarred slag macadam, for the U.D.C. Surveyor, Clock House, Chambers, Barking.

APRIL 27.—**Hyde.**—MATERIALS.—For supply of road and other materials to the T.C. Borough Surveyor, Town Hall, Hyde.

APRIL 28.—**Easingwold.**—ROAD MATERIALS.—Supply of whinstone, slag, &c., to the R.D.C. Mr. F. J. H. Robinson, Clerk, Easingwold.

APRIL 28.—**Flexham.**—ROAD MATERIAL.—Supply of whinstone and broken slag to the R.D.C. Surveyor, 61, Chestnut-grove, New Earswick, York.

MAY 1.—**Staines.**—TAR MACADAM.—Supply of 1,000 tons of slag tar macadam to the U.D.C. Mr. E. J. Barrett, Surveyor, Town Hall, Staines.

MAY 4.—**Margate.**—MATERIALS.—Supply of materials to the T.C. Mr. R. A. Borg, Borough Engineer 13, Grosvenor-place, Margate.

MAY 10.—**Runcorn.**—MATERIALS.—Supply of road materials, pipes, &c., to the R.D.C. Mr. G. F. Ashton, Clerk, Council Offices, Runcorn.

ENGINEERING, IRON AND STEEL.

APRIL 23.—**Durham.**—BRIDGE.—For taking down existing Chester Town Bridge and rebuilding new bridge for the Durham C.C. Mr. A. E. Brookes, County Surveyor, Shire Hall, Durham. Deposit £2 2s.

APRIL 24.—**Guernsey.**—TOWER.—Erection of concrete tower on Roustel Rock, in Little Russel-passage for St. Peter Port Harbour Committee. Mr. J. H. Duquemin, States Engineer, Guernsey.

APRIL 26.—**Edinburgh.**—STRUCTURAL STEEL WORK.—For structural steel work required in connection with erection of public washhouse at Causewayside, for the T.C. Mr. J. A. Williamson, City Architect, Public Works Office, Edinburgh.

APRIL 26.—**Lichfield.**—HEATING.—Heating of Corn Exchange, for the T.C. Mr. P. H. Bean, Surveyor, Guildhall, Lichfield. Deposit, £1 1s.

APRIL 26.—**London.**—TUBES.—Supply of steam tube, and fittings, for the Commissioners of H.M. Works Controller of Supplies, H.M. Office of Works, King Charles-street, S.W.

APRIL 26.—**Nottingham.**—HOT WATER SERVICE.—Installation of hot water service at the Alexandra Ward, Bagthorpe Infirmary for the B.G. Mr. E. R. Sutton, architect, Albion Chambers, King-street, Nottingham.

APRIL 28.—**Manchester.**—ELECTRIC LIGHT.—For installation of electric light at Burley-street School and Princess-road School for the E.C. Education Offices, Deansgate, Manchester. Deposit £1 1s.

MAY 1.—**Manchester.**—GAS WORKS.—Construction of two retort-houses and vertical retort installations on the continuous system, coal and coke handling plant, &c., at the Bradford-road Station, for the Gas Committee. Superintendent, Gas Department, Town Hall, Manchester. Deposit, £2 2s.

MAY 4.—**London.**—BRIDGEWORK.—Supply of 14 spans of bridgework of 150 ft. each, for the South Indian Railway Co. Company's Offices, Finsbury-pavement House, E.C. Charge £2.

✱MAY 10.—**Durham.**—Installation of hot water heating systems for educational buildings for the C.C. Education Committee. Architect, Shire Hall, Durham.

MAY 10.—**Harpenden.**—BRIDGE.—Taking down present bridge and rebuilding new bridge, with brick abutments and steel girders for the Herts C.C. Lt.-Col. Prescott, County Surveyor Hatfield. Deposit £2 2.

MAY 10.—**Kelloside.**—FILTER.—Supply and erection of mechanical filter in existing filter house, for the Dumfries C.C. Messrs. Easton, Brown & Co., Engineers, 149, West George-street, Glasgow. Deposit £1.

MAY 11.—**Liverpool.**—PUBLIC WASH-HOUSE.—Engineering work required in addition to public washhouse for the Corporation. Engineer, Baths Department, Municipal Buildings, Liverpool. Deposit, £1 1s.

MAY 15.—**Stretford.**—BRIDGE.—Erection of reinforced concrete and stone bridge over the Bridgewater Canal, for the U.D.C. Surveyor, Council offices, Stretford. Deposit, £3 3s.

MAY 25.—**South Africa.**—STRUCTURAL STEEL.—Supply of structural steel for extension of goods shed at Capetown for the South African Railways. High Commissioner for South Africa, 32, Victoria-street, S.W.

NO DATE.—**Ipswich.**—BRIDGES.—Designs and estimates for reconstruction in ferro concrete of two bridges. Mr. H. Miller, County Bridge Surveyor, 16, Museum-street, Ipswich.

ROAD, SANITARY, AND WATER WORKS.

APRIL 23.—**Chertsey.**—SEWERAGE WORKS.—For sewerage works, for the U.D.C. Mr. G. Midgley Taylor, 36, Victoria-street, Westminster, S.W. Deposit, £5.

APRIL 24.—**Barnstaple.**—SEWERS.—Construction of 193 yards of 15 in. and 856 yards of 12 in. sewers, for the T.C. Mr. E. Y. Saunders, Borough Surveyor, Barnstaple. Deposit £2 2s.

APRIL 24.—**Wortley.**—ROADS.—Construction of roads and sewers at Ecclesfield housing site for the R.D.C. Mr. F. Thurlby, Surveyor, Council Offices, Greenside, Sheffield. Deposit £1 1s.

APRIL 26.—**Rowley Regis.**—ROADS.—For execution of highway improvement, for the U.D.C. Council House, Old Hill.

APRIL 26.—**Soyland.**—CULVERT.—Reconstruction of culvert on main road, for the West Riding C.C. Mr. F. C. Carpenter, Surveyor, County Hall, Wakefield, Deposit £1.

APRIL 26.—**Tipton.**—SEWERS.—For sewering of Broomfield District for the U.D.C. Mr. W. H. Jukes, Engineer, Public Offices, Tipton. Deposit £3 3s.

APRIL 27.—**Kearsley.**—ROADS, &c.—For sewering and road works, in connection with housing scheme, for the U.D.C. Mr. W. J. Lomax, architect, 11, Foldstreet, Bolton. Deposit £2.

APRIL 28.—**Lindwaite.**—ROADS.—For laying out housing site at Cowlersley for the U.D.C. Mr. J. Ainley, architect, 3, Chapel-hill, Huddersfield.

APRIL 28.—**Pontypridd.**—SEWER.—Diversion of main sewer at Trehafod and Gyfferlion, near Pontypridd for the Ystradyfodwg and Pontypridd Main Sewerage Board. Mr. W. Nicholas, Clerk, Mill-street, Pontypridd. Deposit £3 3s.

APRIL 28.—**Ripon.**—ROADS.—For making up streets, &c., in connection with housing scheme. Mr. A. Barlow, City Surveyor, Town Hall, Ripon. Deposit £1.

APRIL 29.—**Carnarvon.**—ROADS AND SEWERS.—Construction of roads and sewers in connection with housing scheme, for the T.C. Mr. R. Lloyd Jones, architect, Market-street, Carnarvon.

APRIL 30.—**Devizes.**—WATERWORKS.—Construction of well, adits, and borehole for the T.C. Mr. W. J. Rendell Baker, Borough Engineer, Devizes. Deposit £5 5s.

APRIL 30.—**St. Helens.**—SEWERS.—Construction of sewers, &c., in connection with Windlehurst housing scheme, for the T.C. Mr. A. W. Bradley, Borough Engineer, St. Helens. Deposit £1 1s.

MAY 1.—**Hastings.**—SEWERS.—Laying of stoneware pipe sewers, for the T.C. Mr. P. H. Palmer, Borough Engineer, Town Hall, Hastings.

MAY 1.—**Leven.**—ROADS, &c.—Construction of roads and sewers in connection with housing scheme of T.C. Messrs. A. C. Dewer & A. A. Haxton, architects, Leven. Deposit £2 2s.

MAY 3.—**Dubmire.**—RECREATION GROUND.—For laying out recreation ground for the Workmen's Club and Institute. Mr. J. Bates, Secretary, Station-terrace, Fence Houses, Dubmire.

MAY 3.—**Otley.**—SEWER.—Construction of 15 in. sewer, &c., for the U.D.C. Mr. C. F. Hodgson, Surveyor, Council Offices, Otley. Deposit £1 1s.

MAY 4.—**Easington.**—ROADS.—For private street works in the parish of Wingate, for the R.D.C. Surveyor, Castle Eden.

MAY 4.—**Grays.**—SEWERS.—Construction of 5,200 yards of concrete tube and cast-iron sewers etc., for the Thurrock Grays and Tilbury Joint Sewerage Board. Mr. J. Midgley Taylor, Civil Engineer, 36 Victoria-street, Westminster, S.W. Deposit £5.

MAY 8.—**Kingham.**—ROADS, &c.—For construction of roads and sewers at Glames Tower housing site for T.C. Mr. W. B. Wyllie, architect, 196, High-street, Kirkcaldy.

MAY 8.—**Stonehaven.**—ROADS.—For reconstruction and tar paving 11,500 yds. of streets for the T.C. Burgh Surveyor, Stonehaven.

MAY 15.—**Radcliffe.**—SEWERAGE.—Extension of sewerage system of the Radcliffe U.D.C. and Bury R.D.C. Mr. W. L. Bothwell, Engineer, Council Offices, Radcliffe. Deposit £2 2s.

✱MAY 15.—**Northwich.**—ROADS AND SEWERS.—Construction of, for the U.D.C. Messrs. Powles & King, Northwich.

MAY 29.—**St. Helens.**—DUST DESTRUCTOR.—For erection of refuse destructor for the T.C. Mr. A. W. Bradley, Borough Engineer, St. Helens, Deposit £2.

Auction Sales, Tenders, &c.

APRIL 23.—**London, W.1.**—Messrs. Herring Son & Daw will sell by direction of the National Council of the Y.M.C.A., at St. Mary's Club Eaton-square, W.1, temporary and portable buildings.

APRIL 27.—**London, S.E.**—Messrs. Green & Son will sell by direction of the Disposal Board, Huts and Corrugated iron buildings, at the R.A.S.C. Depot, Blackheath. Auctioneers, 72, King-street, Hammersmith.

APRIL 27.—**St. Leonards-on-Sea.**—Messrs. Dyer & Galaway will sell by Order of the Disposal Board, at St. Leonards Brewery Yard, Shepherd-street, third portion of the surplus stores, buildings, &c. Auctioneers, 38, Havelock-road, Hastings.

APRIL 27.—**Slough.**—Messrs. Bradshaw Brown & Co. will sell, by direction of the Disposal Board, plant and machinery at the Motor Transport Depot, Slough. Auctioneers, Billiter-square Buildings, London, E.C. 3.

APRIL 27 AND 28.—**Washford, Somerset.**—Messrs. Joseph Hibbard & Sons, will sell by direction of the Board of Trade, at the Mills, Washford, Somerset, well-cut stock of English timber. Auctioneers, Newington Green, Islington, N.1.

APRIL 28.—**Batchworth, Surrey.**—Messrs. John Churchman & Sons will sell by order of Messrs. Joseph Gardner & Sons (who are relinquishing the English timber trade), valuable plant, machinery and timber, including 4 active heavy draught horses. Auctioneers, Horsham, Sussex.

✱APRIL 28.—**Mill Hill.**—Messrs. Fraser & Sons will sell by direction of the M. of M. Disposal Board at Prisoners' of War Camp, Mill Hill, 52 sectional and non-sectional huts. Auctioneers, 9, Portugal-street, Kingsway, W.C. 2.

APRIL 28.—**Stratford, E.**—Messrs. Protheroe & Morris will sell by Order of the Trustees, valuable free hold estate situate in Temple Mills-lane. Auctioneers 67 and 68, Cheapside, E.C. 2.

APRIL 29.—**Kensington.**—Messrs. Daniel Watney & Sons will sell at Winchester House, Old Broad-street, important freehold estate situate close to Gloucester-road Station, Kensington.

APRIL 29.—**Near Eltham, Kent.**—Messrs. Daniel Watney & Sons will sell about 64 acres of freehold building land. Particulars, 4a, Frederick-place, Old Jewry, London, E.C. 2.

APRIL 30.—**London, E.C.**—Messrs. St. Quintin, Son & Stanley will sell by order of the City Bands' Committee of the Corporation of the City of London, at Winchester House, Old Broad-street, E.C., the building site now covered by premises known as Nos. 9 11, and 13 Arthur-street, King William-street, E.C.

✱MAY 3.—**Canning Town, E.**—Sale by tender by direction of the Disposal Board M. of M. Armstrong huts in lots of 50 and 100, laying at R.E. Stores Depot, Abbey Mills, Cody-road, Canning Town, E.

✱MAY 3.—**Midland Rly.**—Messrs. Robins & Hine will sell at Woodgrange Park Goods Yard, Midland Rly. nr. East Ham, a quantity of useful timber. Stores superintendent, Midland Rly., Derby.

✱MAY 4.—**Ampthill (Beds.)**—Messrs. J. Hibbard & Sons will sell by order of the Board of Trade, at Cooper's Hill Camp, Ampthill, Beds., camp hutments. Auctioneers, Newington Green, Islington, N. 1.

MAY 4.—**London, E.C.**—Mr. Joseph Stower will let by auction at Winchester House, Old Broad-street No. 23 and 25, Maddox-street, on a building lease for 99 years, with vacant possession. Auctioneers, 43 Chancery-lane, W.C.

MAY 4 AND 5.—**Withington, Gloucester.**—Messrs. Joseph Hibbard & Sons will sell without reserve, by Order of the Board of Trade, at Chedworth Camp, stock of hard and soft woods of various kinds of poplar woods. Auctioneers, Newington Green, Islington, N. 1.

✱MAY 5.—**Edghill, Liverpool.**—Messrs. Geo. N. Dixon & Co. will sell by order of Messrs. Bullen Bros. & Sons, Ltd., at the Steam Joinery Works, Spofforth-road, Edge-hill, the whole of the woodworking machinery, builders' plant, and timber stock. Auctioneers, 41, Castle-street, Liverpool.

MAY 5.—**Seaford, Sussex.**—Messrs. Chapman & Martin will sell at the South Camp, Seaford, camp buildings. Auctioneers Station Approach, Seaford.

✱MAY 5.—**Southall.**—Messrs. Horne & Co. will sell at Scott's-road, Southall, seven sheds and huts, building, materials and plant. Auctioneers, 1 Crown-court, Cheapside, E.C. 2.

✱MAY 6.—**Mitcham, Surrey.**—Messrs. Barker & Neal will sell by order of the Disposal Board at the Bucks Head Hotel, Mitcham. Huts and buildings laying at Maple Chemical Works, Mitcham, Surrey. Auctioneer, 13, Lowndes-street, Belgravia, S.W. 1.

MAY 6.—**Salfords, Surrey.**—Messrs. Joseph Hibbard & Sons will sell by Order of the Board of Trade, at the Depot, Salfords Mill, stock of hard and soft woods. Auctioneers, Newington-green, Islington, London, N. 1.

MAY 7.—**Salford.**—Messrs. Hibbard & Sons will include in their sale at Salford Mill sawmill machinery.

MAY 8.—Agricultural drain pipes. The Admiralty Works, Southwick, nr. Brighton.

✱MAY 10.—**London, S.W. 1.**—Sale by tender by direction of the Disposal Board, M. of M., military bedboards, trestles and folding forms, laying at various places. The Controller, Furniture Section, Disposal Board, 18, Queen Anne's-gate, London, S.W. 1.

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★MAY 11, 12 AND 13.—**Hamble.**—Messrs. Hall, Pain & Goldsmith will sell by direction of the M. of M. Disposal Board at the Marine Acceptance Depot, Hamble, valuable material, heavy and light plants and permanent Buildings. Auctioneers, 48, West-street, Fareham.

MAY 11.—**Hull.**—Messrs. N. Easton & Sons will sell at their Mart, Imperial Chambers, Bowlalley-lane, Hull, several valuable brickyards. Auctioneers, Imperial Chambers, Bowlalley-lane, Hull.

MAY 12.—**London, W.**—Messrs. Knight, Frank & Rutley will sell in the Hanover-square Estate Room, valuable area of freehold building land known as the Shrewsbury House Estate, Shooter's-hill, about 52¼ acres. Auctioneers, 20, Hanover-square, W. 1.

MAY 20.—**London, E.C.**—Messrs. Daniel Watney & Sons will sell, at Winchester House, Old Broad-street, the following freeholds:—Stone Park, Greenhithe, 25 acres and family residence; compact freehold property, No. 70 to 77, Cowcross-street, Smithfield; also Gilbert's Estate, 11¼ acres. Auctioneers, 4a, Frederick's-place, Old Jewry, London, E.C. 2.

Competitions.

(See Competition News, page 491.)

Public Appointments.

The President of the R.I.B.A. will be glad to receive the names of applicants for four appointments as Assistant Architects under the Government of Bombay. Commencing salaries from £875 to £1,085 per annum. Candidates must be Fellows or Associates of the R.I.B.A., and not less than 25 years of age. Applications to the Secretary, R.I.B.A., 9, Conduit-street, W.1.

The President will also be glad to receive the names of applicants for two official appointments in China. Commencing salaries about £700 per annum. Candidates must be Fellows or Associates of the R.I.B.A., not less than 28 years of age, with good knowledge of reinforced concrete design and construction. Applications to the Secretary, R.I.B.A., 9, Conduit-street, W.1.

APRIL 23.—**Margate.**—Clerk of Works, for the borough. Salary £6 10s. per week. Town Clerk, 13, Grosvenor-place, Margate.

APRIL 23.—**Somerset.**—Clerk of Works in the Small Holdings Works Department. Salary £5 10s. per week. Works Dept. 1, Belvedere Beach-road, Weston-super-Mare.

APRIL 23.—**Guildford.**—Clerk of Works for the Borough. Salary £6 6s. per week. Mr. Ed. L. Lunn, Supervising Architect, 36, High-street, Guildford.

APRIL 24.—**Chorley.**—Clerk of Works required by the R.D.C. Mr. R. E. Aspden, Clerk to the Council, Council Offices, High-street, Chorley.

APRIL 24.—**Tottenham.**—Clerk of Works for the Education Committee. Salary £300 per annum, rising by two annual increments of £25 to a maximum of £350. Clerk to the Committee, Education Offices, Philip-lane, Tottenham, N. 15.

APRIL 26.—**Wycombe.**—Clerk of Works required by the U.D.C. to act under Council's Architect. Mr. B. L. Reynolds, 12, Euston-street High Wycombe.

APRIL 27.—**Burnley.**—Clerk of Works for the Town Council. Salary £350 a year. Town Clerk, Town Hall, Burnley.

APRIL 28.—**Merton and Morden.**— Temporary Builder's or Contractor's Clerk required by the U.D.C. Mr. C. J. Mountifield, Clerk to the Council, Kingston-road, Merton, S.W.19.

★APRIL 29.—**Wandsworth, S.W.**—Male Sanitary Inspector required by the Metropolitan Borough. Town Clerk, Council House S.W.18.

APRIL 30.—**Auckland.**—Architectural Assistant for the R.D.C. Mr. C. Heslop, Surveyor, Cradock-street, Bishop Auckland.

APRIL 30.—**Calcutta.**—City Architect required for Corporation of Calcutta, India. Salary Rs.1,500 per month. Secretary to the Corporation of Calcutta, Central Municipal Office, Calcutta.

APRIL 30.—**Devon.**—Clerk of Works for the County Council. Mr. Brian S. Miller, Clerk to the Council, Castle of Exeter.

APRIL 30.—**Oldbury, nr. Birmingham.**—Clerk of Works for the U.D.C. Mr. A. Fletcher, Engineer and Surveyor, Public Buildings, Oldbury.

APRIL 30.—**Stepney.**—Architectural Draughtsman required by the Borough. Salary £250 per annum. Borough Engineer, Municipal Offices, 15, Great Alie-street, E.1.

MAY 1.—**Newburn.**—Two Clerk of Works for the U.D.C. Mr. H. F. J. Modlin, Clerk, Council Offices, Newburn-on-Tyne.

★MAY 3.—**Kettering.**—Clerk of Works for the U.D.C. Mr. John Bond, Clerk, Council Offices, Kettering.

MAY 10.—**North Walsham.**—Foreman forthe R.D.C. Mr. H. W. T. Empson, Clerk, North Walsham.

MAY 11.—**Enfield.**—Engineer and Surveyor for the U.D.C. Salary, including war Bonus, £600 with annual increments of £40 to a maximum of £800. Mr. W. Scott, Clerk, Public Offices, Enfield, Middlesex.

★NO DATE.—**Hong Kong.**—Architectural Assistant required by the Government of Hong Kong for service for three years as an Assistant Engineer (Grade 2). Crown Agents for the Colonies, 4, Millbank, London, S.W. 1.

NO DATE.—**Rawmarsh.**— Architect's Assistant for the U.D.C. Mr. J. A. Tonge, Surveyor to the Council, Parkgate, Yorkshire.

Collapse of a Billiard Hall.

On Friday, last week, the St. George's Billiard Hall, Wolverhampton, collapsed without warning, and two men were killed in the debris. It appears that the first warning of the accident was furnished by pieces of plaster dropping from the ceiling, immediately after which the whole building collapsed. An inquest on the victims was opened on Monday last, and was adjourned until April 29.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

AYR.—At the Dean of Guild Court plans have been passed for the erection of a yarn store by Messrs. J. Templeton & Sons, Ltd., worsted spinners, at a cost of £2,000; a bakery by Mr. N. Brown, Limekiln-road, at a cost of £600; and for a motor garage to be erected by Mr. A. M'C. Morton, at Hartfield-road.

BARNES.—Plans passed by U.D.C.: additions, 42, Madrid-road, Barnes, by Mr. R. B. Rowell; workshops, Aynscombe-lane, Mortlake, by Watney, Combe Reid & Co., Ltd.; workshops, rear of Nos. 48–53, Merthyr-terrace, Barnes, by Vulcan Engineering Co.; eight houses, Church-road, Barnes, by Mr. A. C. Kerven; additions to hall, "Thornfield," Woodlands-road, by J. Culver & Sons.

MAIDENHEAD.—Plans passed: Bungalow, College Rise, for Mr. G. West; alterations to motor garage, Bridge-road, for Hewens & Co.; machine shop and foundry, off Market-street, for Messrs. W. H. Arundell & Co.; alterations and additions to 101, High-street, for Mr. L. Ashling; dining hall, Masonic Lodge, for the Maidenhead Masonic Hall Co., Ltd.; house in Belmont-road, for Cooper & Sons, Ltd.; two houses in Clare-road, for Mr. T. Hanson.

SHEFFIELD.—Plans approved: House, Carterknowle-road, for Mr. F. Somerfield; house, Sefton-road, for Mr. T. C. Parkin, Jun.; house and garage, Chelsea-road, for Mr. G. S. Marple; 42 houses, Langsett avenue, Airedale-road, Townshead-road and Worrall-road, for J. H. S. Randall, Ltd.; 70 houses, Langsette avenue, Airedale-road, Vainor-road, and Milden-road, for Reed & Bilbrough; two houses, Little Common and Abbey-lanes, for Colonel Clifford; house, picture theatre and restaurant, South-street, Moor, Earl-street, Porter-street and Alsop-lane, for Central Pictures (Sheffield), Ltd.; two houses, Meadow Bank-avenue, for Mr. Percy Weston; three houses, Edmund-road, for Clough Bank Estate Co.; eight houses, Dobbin Hill, for Mr. A. Shaw; eight houses, new road off Popple-street, for Messrs. Vickers Ltd.; two houses and motor house, Ringinglowe-road, for Mr. P. J. Roberts; house, office and works, Cemetery-road and Frog-walk, for A. Bradbury & Son; house and picture theatre, Infirmary-road and Jobson-place, for the Roscoe Picture Palace Co., Ltd.; two houses, Western-road, for Mr. E. Holmes; two houses, Stumperlowe-Park-road, for Mr. J. W. Sivil; house, Warminster-road, for Mr. F. W. Tarlton; house, Cobnar-road, for Mr. T. E. Ellison.

STRETFORD.—Plans passed by U.D.C.: Conveniences Trafford Park-road, for Messrs. N. Kilvert & Sons, Ltd.; office, Elsinore-road, for the Reinforced Concrete Construction Co.; motor house, Elsinore-road, for the Wardle Engineering Co., Ltd.; bag repairing shop, Trafford Wharf-road, for the British Oil & Cake Mills, Ltd.; machine shop, Elsinore-road, for the Lancashire Gear Cutting Co., Ltd.; extension of Elsinore-road, for the De Trafford Estates; house, Cromwell-road, for Mr. Joseph Holt; foundry, &c., Elsinore-road, for Messrs. Marcus Allen & Sons, Ltd.; workshop, behind Cavendish-road, for Mr. Fred Thorpe; seven houses, Burleigh-street, for Mr. Fred Thorpe; motor works, Chester-road, for Mr. Dadjab Ajderian; garage, &c., Upper Chorlton-road, for the Bracegirdle Motor Co., Ltd.; addition, Trafford Park-road, for Messrs. Royce, Ltd.; offices, &c., Praed-road, for Messrs. W. H. Worthington, Ltd.; addition, Westinghouse-road, for Messrs. The Ford Motor Co. (England), Ltd.; iron foundry, office, publishing department, schoolroom, punch die store, pattern stores, for the Metropolitan Vickers Electrical Co., Ltd.; staff canteen, Westinghouse-road, for the Metropolitan Vickers Electrical Co., Ltd.; works and stores, Elevator-road, for Messrs. Joseph Walker, Kenyon & Co.; Ltd.; glass factory, Third-avenue, for the Lancashire Automatic Glass Co., 236 houses for the U.D.C.

FIRES.

BARNSLEY.—A destructive fire has occurred at the premises of the Barnsley Brewery Co., at Hoyle Mill.

BIRMINGHAM.—Considerable damage has been done by fire to the premises of the Carpathian Manufacturing Co. in Northwood-street.

CITY OF LONDON.—One-third of the Luton hat manufacturing premises of Walter Webb & Baker, Ltd., 35, Monkwell-street, E.C., have been destroyed by fire.

GLASGOW.—The oilcake works belonging to Messrs. Cross, at Port Dundas, have been gutted by fire. The damage is officially estimated at £80,000.

LIVERPOOL.—Damage estimated at considerably over £50,000 resulted from a fire which broke out in the upper storys of a large cotton warehouse, owned by Messrs. Burns, in Errington-street.

NORTH SHIELDS.—A serious fire occurred at North Shields at the bonded warehouse of Messrs. Fraser & Co., ship store merchants.

* See also our List of Competitions, Contracts, &c.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.* ‡ Denotes *recommended for acceptance.* § Denotes *accepted subject to modifications.*

ASHBOURNE.—For road and sewer construction, for the U.D.C.:—
*G. Gaunt £7,100

AYLESBURY.—For (*a*) erection of pumping station, (*b*) erection of plant at pumping station, for the T.C.:—
* (*a*) Webster & Cannon £3,588
* (*b*) E. T. Mackrill 920

BASFORD.—For the painting at waterworks pumping station, &c., for the R.D.C. Mr. S. Maylan, Engineer and Surveyor, Basford:—
*A. H. Fryer, Notts £78 5 0
G. A. Pillatt & Sons, Nottingham 121 5 0
W. H. S. Rushden, Nottingham 105 0 0
P. Henfrey, East Kirby 104 18 6

BATH.—For construction of roads and sewers on Englishcombe Fields housing site, for the T.C.:—
*Merryweather & Son, Bedminster ... £22,450

BOURNE.—For the erection of eight houses, for the U.D.C. Mr. H. R. Agnew, architect, Town Hall, Bourne. Quantities by Mr. A. R. Agnew:—
T. H. Hinson, Coggles Causeway, Bourne £1,480
(Only tender).

BRADFORD.—For the erection of new works at Thorncliffe-road:—
*B. Kershaw & Sons, Bradford (mason work) £1,518 10
†W. Kellett, Bradford, (joiner work) 710 0
*S. Rushworth, Shipley (plumber work) 318 0
*S. Groves, Bradford (plaster work) 785 0
*E. & J. Brooke, Bradford (slater work) 252 2

BRADFORD.—For construction of 42 dressing boxes at Lister Park Baths, for the T.C.:—
*J. Moulson & Son £435

BRADFORD.—Supply of 50,000 lineal feet of pitch pine floor laths, for the Tramways Committee:—
*Beecroft & Wightman £520 16

BRADFORD.—For supply and erection of 217 lineal yards of wooden fencing with gates, at Valley-road Electricity Works, for the T.C.:—
*T. Obank & Sons £598

BRADFORD.—For provision of hatchboxes at (*a*) Nidd Aqueduct; and (*b*) Gilstead Pipe Line, for the Waterworks Committee:—
*Glenfield & Kennedy (*a*) £25,941 (*b*) £2,340

DUDLEY.—For main drainage works on three sites, for the T.C. Mr. V. Turner, Borough Engineer Town Hall, Dudley:—
Construction of Foul Sewer, Halesowen-road, Netherton:
*Taplin & Holland, Birmingham £906 10 0
Construction of Foul Sewer, Blowers Green:
*Martin & Element, Smethwick ... £420 18 8
Erection of Sewage Pump House, Red Hill:
Currall, Lewis & Martin, Birmingham £845 0 0
Construction of 6 in. cast-iron Rising Main, Red Hill:
*W. Thorpe, Birmingham £674 0 6
Duplicate Pumping Plant, Red Hill:
Pulsometer Engineering Co., Birmingham £1,112 0 0

DUNFERMLINE.—For supplying and laying 6 in. and 4 in. diameter C.I. water mains, required in connection with the laying-out of part of housing scheme at Brucefield, for the Dunfermline T.C. Mr. R. Mair Morton, Burgh Engineer:—
*Mr. Ritchie, Dunfermline £3,142 16 9
McKay Bros. 2,806 14 2
A. Robertson, Inverkeithing .. 2,227 7 6
R. Morrison, Kirkcaldy 2,444 18 1
J. Houston & Co., Glasgow .. 3,732 14 8
Crawford Bros., Largs, Ayrshire 2,999 10 6
* Amended.

GLASGOW.—Alterations to bandstand enclosure at Kelvingrove Park, for the T.C.:—
*J. Drysdale, Glasgow £124 13

GLASGOW.—For (*a*) roads and sewers at Springfield-road; and (*b*) tar macadam work, for the T.C.:—
*(*a*) Hunter & Clark £4,917 18 0
*(*b*) Wilson & Co. 2,578 1 8

GLASGOW.—For laying out streets, &c., at Kennyhill and Riddrie (No. 3) Areas, for the T.C.:—
*Geo. Duncan & Son £36,199 8 0

LEIGH-ON-SEA.—New house for Mr. S. Shelley in Vernon-road, Leigh-on-Sea. Mr. Gordon Allen F.R.I.B.A., architect, 435, Strand, W.C. 2:—
*F. W. Goldsworthy, Leigh-on-Sea.... £985

LONDON.—Construction of additional entrance to battery room at Northwood-road sub-station, for the Hackney B.C.:—
*Marrable Bros., Leytonstone £157 10
L. H. & R. Roberts 163 0

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

	Per 1,000 Alongside, in River Thames up to London Bridge.	£ s. d.
Best Stocks		4 15 0
Per 1000, Delivered at London Goods Stations.	£ s. d.	£ s. d.
Flettons	3 2 6	Best Blue Pressed Staffordshire	9 11 0
Best Stourbridge Fire bricks	11 10 0	Do. Bullnose	9 13 6
		Blue Wire Cuts	7 18 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	24 0 0	D'ble Str'tch'rs	31 10 0
		D'ble Headers	28 10 0
Headers	23 10 0	One Side and two Ends	32 10 0
Quoins, Bullnose and 4½in. Flats	29 10 0	Two Sides and one End	33 10 0
		Splays and Squints	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.	
Thames Ballast	19 6	per yard, delivered
Pit Sand	23 6	
Thames Sand	25 6	2 miles
Best Washed Sand	24 6	radius
¾ in. Shingle for Ferro-Concrete	23 6	Paddington.
¼ in. ,, ,,	24 6	,, ,,

Per ton. delivered in London area.

	£ s. d.	£ s. d.
Best Portland Cement	3 18 6	4 4 0

71/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above.

Best Ground Blue Lias Lime 2 16 0 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 61s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 43s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 4
Do. do. delivered on road waggons at Nine Elms Depot	2 5
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	4 3
Do. do. delivered on road waggons at above stations, per ft. cube	4 4

White basebed, 3d. per ft. cube extra.

NOTE.—½d ft. cube extra for every foot over 30 ft. *average*, and ½d. beyond 30 ft.

	s. d.
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	11 9
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	8 1½
6 in. rubbed two sides, ditto ..... ,,	9 1½
3 in. sawn two sides slabs (random sizes) ,,	3 7½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	2 2
1½ in. to 2 in. ditto, ditto ..... ,,	1 10
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	8 9
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	7 0
6 in. rubbed two sides ditto ..... ,,	8 3
4 in. sawn two sides slabs (random sizes) ,,	3 3
3 in. ditto, ditto ,,	4 4
2 in. self-faced random flags .. Per Yard Super	10 6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	60 0	per standard
4 × 9	58 0	,,
4 × 8	46 5	,,
4 × 7	46 0	,,
3 × 8	46 0	,,
3 × 7	46 0	,,
2½ × 7	45 0	,,
3 × 6	45 0	,,
3 × 11	60 0	,,
2 × 11	60 0	,,
3 × 9	55 0	,,
3 × 9	55 0	,,
3 × 4½	43 0	,,
3 × 4	43 0	,,

PLANED BOARDS.

1 × 11	65 0	,,
1 × 9	60 0	,,

PLAIN EDGE FLOORING.

Inches		
¾	34/-	square
1	42/6	,,
1¼	47/6	,,
1½	60/-	,,
1¾	70/-	,,

TONGUED AND GROOVED FLOORING.

Inches		
1	47/6	square
1¼	60/-	,,
1½	70/-	,,

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	34/-	square
⅞	40/-	,,
1	54/-	,,

BATTENS.

Inches	£ s.	
1½ × 2	39 10	per standard

SAWN LATHS.

Per bundle	—

Dry Wainscot Oak, per ft. super, as inch	0	2	6	to	0	3	0
½ in. do.	0	2	0	to	0	2	6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6	to	0	3	0
Cuba, Mahogany	0	3	6	to	0	4	0
Teak (Rangoon, Moulmein or Java), per load	60	0	0	to	85	0	0
American Whitewood planks, per ft. cube	0	18	0	to	1	0	0
Scotch Glue, per cwt.	5	5	0	..	—		
Liquid Glue, per gallon	0	17	0	..	—		

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

	£ s. d.
Best Blue Bangor Slates, 24 by 12	55 0 0
,, ,, ,, 22 by 12	44 7 6
First quality ,, 22 by 11	40 15 0
,, ,, 20 by 12	40 7 6
Best Blue Portmadoc 20 by 10	35 0 0
,, ,, 18 by 10	27 17 6
First quality ,, 18 by 9	22 15 0
,, ,, 16 by 10	21 10 0
,, ,, 16 by 8	16 17 6

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 15 0
Ditto hand-made ditto	7 0 0
Ornamental ditto	7 2 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	s. d.
R. S. Joists, cut and fitted	30 0 0
Plain Compound Girders	32 0 0
,, Stancheons	34 0 0
In Roof Work	39 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £10 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	10	12½	12½	25
Water	1½	7½	5	22½
Steam	+8½	—2½	+3½	—20
Galvanised Gas	+15	—2½	+12½	—15
,, Water	+26½	+2½	+22½	—12½
,, Steam	+37½	+7½	+32½	—10

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts.	5 6	4 9	4 18
2½ in. ,,	6 8	4 5	6 0
3 in. ,,	8 1	4 10	7 3
3½ in. ,,	9 0	6 0	8 5
4 in. ,,	9 6	6 10	9 8

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	4 0	2 3	3 0
2½ in. ,, ,,	4 6	2 8	3 8
3 in. ,, ,,	5 6	3 3	4 10
3½ in. ,, ,,	6 6	3 10	5 8
4 in. ,, ,,	6 9	4 8	6 10

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices. 4 in., 12s. .. 5 in., 15s. .. 6 in., 18s.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	32 0 0	to	33 0 0
Staffordshire Crown Bars—good merchant quality	33 0 0	..	34 0 0
Staffordshire "Marked Bars"	34 0 0	..	35 0 0
Mild Steel Bars	34 0 0	..	35 0 0
Steel Bars. Ferro-Concrete quality, basis price	34 0 0	..	35 0 0
Hoop Iron, basis price	38 0 0	..	40 0 0
,, ,, Galvanised	58 0 0	..	60 0 0
Sheet Iron Black—			
Ordinary sizes to 20 g.	48 0 0	..	50 0 0
,, ,, 24 g.	49 0 0	..	51 0 0
,, ,, 28 g.	51 0 0	..	53 0 0
Sheet iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	56 0 0	..	58 0 0
Ordinary sizes to 22 g. and 24 g.	57 0 0	..	59 0 0
Ordinary sizes to 26 g.	59 0 0	..	60 0 0
Ordinary sizes to 20 g. ,, ,, 22 g. and 24 g.	56 0 0	..	58 0 0
Ordinary sizes to 26 g.	57 0 0	..	59 0 0
	59 0 0	..	60 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	58 0 0	..	60 0 0
Ordinary sizes, 22 g. and 24 g.	59 0 0	..	61 0 0
Ordinary sizes, 26 g.	60 0 0	..	63 0 0
Sheet Iron, Galvanised, flat, best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	58 0 0	—	60 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	59 0 0	..	61 0 0
Best Soft Steel Sheets, 26 g.	61 0 0	..	62 0 0
Cut Nails, 3 in. to 6 in.	44 10 0	..	45 0 0

(Under 3 in. usual trade extras.)

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	53 0 0	..	—
Pipe in coils	53 10 0	..	—
Soil Pipe	56 0 0	..	—
Compo pipe	57 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	34 0 0	..	—
Do., ex country, carriage forward ..... per ton	35 0 0	..	—

COPPER—			
Strong Sheet ..... per lb.	0 2 3	..	—
Thin ,, ... ,,	0 2 4	..	—
Copper nails ..... ,,	0 2 3	..	—
Copper wire ..... ,,	0 2 4	..	—
TIN—English Ingots ,,	0 3 6	..	—
SOLDER—Plumbers' ,,	0 1 10	..	—
Tinmen's ,,	0 2 6	..	—
Blowpipe ,,	0 2 11	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.
15 oz. fourths ..... 8d.	32 oz. fourths	11d.
,, thirds ..... 8½d.	,, thirds	1/-
21 ,, fourths ..... 9d.	Fluted, Obscured and Enamelled Sheet,	
,, thirds ..... 9½d.	15 oz.	10d.
26 ,, fourths ..... 10d.	21 ,,	1/-
,, thirds ..... 11d.		

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	6½d.
⅛ Rough rolled and rough cast plate	7½d.
¼ Rough rolled and rough cast plate	8½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	7d.
White Rolled Cathedral	7d.
Tinted do.	9d.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes ..... per gallon	0 10 2
,, ,, ,, in barrels ,,	0 10 4
,, ,, ,, in drums ,,	0 10 6
Boiled ,, ,, in barrels ,,	0 10 10
,, ,, ,, in drums ,,	0 11 0
Turpentine in barrels ,,	0 17 10
,, in drums (10 gall.) ,,	0 18 4
Genuine Ground English White Lead, per ton	90 15 ,,

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT—
"Nine Elms," "Park," "Supremus," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.. per ton delivered 111 10 0
Red Lead, Dry (packages extra) .. per ton 63 0 0
Best Linseed Oil Putty ..... per cwt. 1 14 0
Flocol ..... per cwt. 0 18 0
Size. X D Quality ..... fkn. 0 5 0

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish ..... Outside	0 18 0
Fine ditto ..... ditto	1 0 0
Fine Copal ..... ditto	1 1 6
Pale Copal ..... ditto	1 2 6
Pale Copal Carriage ..... ditto	1 4 6
Best ditto ..... ditto	1 14 6
Floor Varnish ..... Inside	0 19 0
Fine Pale Paper ..... ditto	0 18 0
Fine Copal Cabinet ..... ditto	1 2 6
Fine Copal flatting ..... ditto	1 0 6
Hard drying Oak ..... ditto	0 18 0
Fine Hard drying Oak ..... ditto	0 19 0
Fine Copal Varnish ..... ditto	1 0 6
Pale ditto ..... ditto	1 2 6
Best ditto ..... ditto	1 14 6
Best Japan Gold Size	0 16 0
Best Black Japan	0 19 0
Oak and Mahogany Stain (water)	0 10 0
Brunswick Black	0 11 0
Berlin Black	0 16 0
Knotting (patent)	1 18 6
French and Brush Polish	1 11 0
Liquid Dryers in Terebine	0 19 0
Cuirass Black Enamel	3 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

LONDON (LEWISHAM).—For the erection and completion of 10 "B" type and 3 "B 4" type houses on the Lewisham Park site, for the B.C. Mr. Archibald S. Soutar, architect, 8A King William-street, W.C. 2. Quantities by Mr. George Silvester, 7, Adam-street, W.C. :—

†W. Pollock, Eltham	£15,525	0	0
Harry Groves & Son, Greenwich	15,869	13	8
H. H. Hollingsworth & Son, Peckham	18,237	0	0
F. W. Loasby, Lewisham	18,659	0	4
John Appleby & Sons, Ltd., Rotherhithe	22,421	0	0

LONDON.—For alterations and additions to the Magnet Building Society, 81–83, Harrow-road, W. (second contract). Messrs. G. Reginald Farrow, F.R.I.B.A., and Sydney R. Turner, architects, Amberley House, Norfolk-street, W.C :—

*Robertsons, Knightsbridge, S.W.	£2,500
Jones & Andrews, Beckenham	3,007
L. H. & R. Roberts, Clapton	2,766
Ropleys, Duke-street, W.	2,500

LONDON.—For wood paving works in New Cross-road, for the Deptford B.C. :—

Improved Wood Pavement Co.—28s. 6d. per sq. yard, 7 in. to 9 in. by 3 in. wide by 4 in. deep.

LONDON.—Construction of floor beneath Weybridge-street Baths for the Hackney B.C. :—

*L. H. & R. Roberts, 144, Lower Clapton-road	£129	0	
Marrable Bros., 57, Wellesley-road, E. 11	142	10	
Wm. Shurmur & Sons, Ltd., Riverside Works, Upper Clapton	146	0	

LONDON.—For providing and laying compressed asphalte in various roads for the Camberwell B.C. :—

*Limmer & Trinidad Lake Asphalte Co.—7,000 yds. super in East Dulwich-road section at 21s. per yd.
*French Asphalte Co.—for 10,509 yds. super in Melbourne-grove, &c., at 22s. per yd.
*New Bradshaws Asphalte Co.—6,972 yds. in Croxted-road at 17s. 3d. per yd.
*Val de Travers Asphalte Paving Co.—9746 yds. in Nunhead-lane, &c., at 21s. per yd.

NEWCASTLE EMLYN.—For the rebuilding of "Trewen" Congregational Chapel, Newcastle Emlyn. Mr. J. Howard Morgan, F.R.I.B.A., architect, 24, King-street, Carmarthen :—

*Thomas Lewis & Son, Newcastle Emlyn £3,443

NEWQUAY.—For erection of 24 houses for the U.D.C. :—

*A. Gerry £11,336

RUNCORN.—For erection of houses for the R.D.C.

*W. H. Davey & Co., Runcorn—16 houses at £16,400 and 8 at £6,950.

STAINES.—For erection of 82 houses, road-making, fencing, and drainage, with the lay-out of the following sites: Sipson, 24 houses; Bedfont, 20; Hanworth, 20; Laleham, 8; Poyle, 10, for the Staines R.D.C. Architects: Mr. W. E. Watson, 37, Norfolk-st., W.C. (No. 1 District), Mr. Wilfrid Ainslie, 16, Cork-street (No. 2 District) in collaboration with Mr. G. W. Manning, Lic.R.I.B.A., Borough Surveyor. Quantities by Messrs. Elwell & Knight, 38, Parliament-street, S.W. :—

*Messrs. Fitch & Sons, Enfield £81,299

STRETFORD.—For sewering and road formation on Moss-road site, for the U.D.C. :—

*Bethell & Sons £16,355 17 0

STRETFORD.—For erection of houses, for the U.D.C. :—

*Longworth & Maunders	157 houses at £136,772 9 0
W. H. Matthews	79 houses at £69,469 2 8

WEYMOUTH.—For removal of hut at Upwey and alterations and additions to Administrative Block, Isolation Hospital, for the T.C. :—

*Jenkins & Hitt	£355 0
Jesty & Baker	385 0
Conway, Ltd.	396 0
A. E. Whettam	453 19

WEYMOUTH.—For cleaning and painting exteriors of ward blocks, &c., at the Isolation Hospital, for the T.C. :—

*J. T. Wills	£255 0
R. A. Ayles & Son	357 0
Pates Bros.	405 12

TRADE NEWS.

"Titon," a new black compound of asbestos and plastic material for weather-proofing purposes, is manufactured by Messrs. Titon (Liverpool) Ltd., of Eagle Works, Leather-lane, Liverpool. The material is easily applied by means of a trowel, and gradually changes from the consistency of putty to that of rubber. As it never sets quite hard, any possibility of cracking is eliminated; it also retains its elasticity during hot and cold weather. "Titon" is useful for any purpose where a weather-proof surface is required, such as flashings, joints in gutters and rain-pipes, cracks in slates and tiles and for covering and water-proofing felt roofs.

Housing Bonds.

The meeting at the Guildhall to promote the housing bonds scheme, which was to have been held on April 12, has been postponed to May 3 at the request of the Prime Minister.

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